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AD-705 900

**CIVIL DEFENSE SYSTEMS:
PREATTACK AND POSTATTACK
(NUCLEAR WARFARE)**

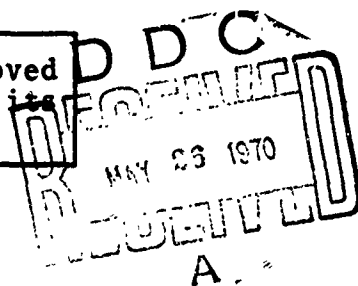
Volume I of II Volumes

A DDC BIBLIOGRAPHY

March 1960 - September 1969

DDC-TAS-70-44-1

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May 1970

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AD-705 900

**CIVIL DEFENSE SYSTEMS:
PREATTACK AND POSTATTACK (NUCLEAR WARFARE)**

VOLUME I OF II VOLUMES

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MAY 1970

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F O R E W O R D


This bibliography is Volume I of a two-volume set on *Civil Defense Systems: Preattack and Postattack (Nuclear Warfare)*, in a series of bibliographies on Civil Defense Systems. Entries have been selected from references processed into the AD data bank from January 1960 to December 1969, and contains 156 unclassified and unlimited references.

Volume II, AD-868 950, contains 82 references with limited distribution.

Computer-generated indexes of Corporate Author-Monitoring Agency, Subject, and Contract are provided.

BY ORDER OF THE DIRECTOR, DEFENSE SUPPLY AGENCY

OFFICIAL


ROBERT B. STEGMAIER, JR.
Administrator
Defense Documentation Center

The following is a selective list of titles of bibliographies. (DDC bibliographies are announced regularly in the *Technical Abstract Bulletin* (TAB), page ii, and in *TAB Indexes*, page ii.)

CIVIL DEFENSE SYSTEMS: COMMUNICATIONS
CIVIL DEFENSE SYSTEMS: DISASTERS AND ACCIDENTS
CIVIL DEFENSE SYSTEMS: SHELTERS
CIVIL DEFENSE SYSTEMS: SOCIAL IMPACT AND
MANAGEMENT PLANNING
FIRE EXTINGUISHERS
FOREST FIRES AND RELATED EQUIPMENT
IMPACT OF REDUCED DEFENSE EXPENDITURES
MANAGEMENT INFORMATION SYSTEMS
PSYCHOLOGICAL STRESS ON HUMANS
RADIOACTIVE WASTE DISPOSAL
RADIOPROTECTIVE DRUGS
SEARCHLIGHTS
SMALL GROUP DYNAMICS
TEACHING MACHINES AND PROGRAMMED INSTRUCTION
USE OF COMPUTERS IN MEDICINE

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-255 770

HUMAN SCIENCES RESEARCH INC MCLEAN VA
OUTLINE OF AN ANALYTIC APPROACH TO PREDICTING
SOCIETAL SYSTEM RECOVERY FROM AN AIR ATTACK (U)

MAR 61 IV LYBRAND, WILLIAM A.:

REPT. NO. RR 61 1 SE

CONTRACT: AF49 638 549

MONITOR: AFOSR TN60 1496

UNCLASSIFIED REPORT

DESCRIPTORS: *CIVIL DEFENSE SYSTEMS, *RADIOACTIVE
FALLOUT, *RADIOLOGICAL WARFARE, MATHEMATICAL PREDICTION,
RECOVERY, SOCIOLOGY (U)

THE ULTIMATE OBJECTIVE OF THE PRESENT RESEARCH PROGRAM IS DEVELOPMENT OF A RECOVERY-PREDICTION SYSTEM THAT INTEGRATES BOTH PHYSICAL AND SOCIAL EFFECTS OF THERMUNUCLEAR AIR ATTACK. RECOVERY AS AN OVER-ALL GOAL IN SUCH A SITUATION IS DEFINED AS THE SUCCESSIVE ACCOMPLISHMENT OF THREE SEPARATE SUBGOALS: (1) VIABILITY OF THE SURVIVING SOCIETY; THIS REFERS TO THE MINIMUM BEDROCK REQUIREMENTS FOR HUMAN SURVIVAL (E. G., AMOUNTS OF FOOD, SHELTER, CLOTHING), (2) DEVELOPMENT AND MAINTENANCE OF A WAR-WAGING CAPABILITY, AND (3) LONGER-RANGE IDEOLOGICAL, CULTURAL, AND SOCIETAL GOALS. THE PARTICULAR POTENTIAL APPLICATIONS OF THE PREDICTIVE SYSTEM ARE CONCERNED PRIMARILY WITH THE FIRST TWO SUBGOALS. IT IS IMPORTANT TO NOTE, HOWEVER, THAT THOSE PRE-ATTACK IDEOLOGICAL, CULTURAL, AND SOCIETAL FACTORS WHICH ARE IMPORTANT DETERMINANTS OF VIABILITY AND WARWAGING CAPABILITY ARE OF DIRECT CONCERN TO THE INQUIRY. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-276 117

ARMY BIOLOGICAL LABS FREDERICK MD

BIOLOGICAL DECONTAMINATION METHODS APPLICABLE TO
CIVIL DEFENSE

IV (U) HOFFMAN, ROBERT K.; SPINER, DAVID R.;

UNCLASSIFIED REPORT

DESCRIPTORS: *BIOLOGICAL WARFARE, *DECONTAMINATION,
CIVIL DEFENSE SYSTEMS, CLEANING, CLOTHING, FOOD,
GERMICIDES, HOUSING, PERSONNEL, TERRAIN, WATER (U)

A PRESENTATION OF DECONTAMINATION PROCEDURES AND
DISINFECTANTS THAT ARE AVAILABLE TO THE PUBLIC FOLLOWING A
BIOLOGICAL ATTACK. THIS INCLUDES DECONTAMINATION OF
THE SKIN, CLOTHING, FOOD, WATER, EQUIPMENT, BUILDINGS,
TERRAIN, AND ACCIDENTAL SPILLS OF PATHOGENIC
MICROORGANISMS.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-276 541

STANFORD RESEARCH INST MENLO PARK CALIF
POSTATTACK FARM PROBLEMS. PART I: THE INFLUENCE OF
MAJOR INPUTS ON FARM PRODUCTION (U)
IV MOLL, KENDALL D. ICLINE, JACK H. HARR,
PAUL D.;

UNCLASSIFIED REPORT

DESCRIPTORS: *AGRICULTURE, ANIMALS, CIVIL DEFENSE
SYSTEMS, ECONOMICS, FOOD, INDUSTRIAL PRODUCTION, NUCLEAR
WARFARE (U)

SHORTAGES OF INPUTS FOLLOWING A NUCLEAR ATTACK
COULD RESULT IN SERIOUS DECLINES IN AGRICULTURAL
PRODUCTIVITY BUT EFFECTIVE ACTIONS COULD BE TAKEN TO
LIMIT THESE DECLINES. IN THE FIRST YEAR AFTER A
CUTOFF OF ALL OFF-FARM INPUTS, PRODUCTION UNDER
CURRENT METHODS WOULD AMOUNT TO LESS THAN ONE-THIRD
OF NORMAL. IF INPUTS WERE NOT RESUMED AFTER THE
FIRST YEAR, PRODUCTION WOULD FALL TO LOWER LEVELS
BECAUSE OF THE EXHAUSTION OF RESERVE SUPPLIES AND THE
CUMULATIVE EFFECTS OF CONTINUING SHORTAGES.
HOWEVER, THE ADOPTION OF A SERIES OF EMERGENCY
MEASURES COULD MAINTAIN PRODUCTIVITY AT ABOUT TWO-
THIRDS OF NORMAL IN THE FIRST POSTATTACK YEAR EVEN
UNDER EXTREME SHORTAGE CONDITIONS AND CONSIDERABLY
REDUCE THE EFFECTS OF SHORTAGES IN SUCCEEDING YEARS.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-277 677

OFFICE OF NAVAL RESEARCH WASHINGTON D C
AN EVALUATION OF THE NEED FOR FILTRATION SYSTEMS TO
PROTECT SHELTERED PERSONNEL FROM RADIOACTIVE
FALLOUT

(U)

MAY 62 19P

REPT. NO. ACR 72

UNCLASSIFIED REPORT

DESCRIPTORS: ACCIDENTS, CIVIL DEFENSE SYSTEMS, FILTERS
(FLUID), FISSION PRODUCT POISONING, HALF LIFE,
PARTICLES, PHYSIOLOGY, RADIATION ALARMS, RADIATION
HAZARDS, RADIATION INJURIES, RADIOACTIVE ISOTOPES,
RADIOLOGICAL WARFARE, SHELTERS

(U)

THE HAZARDS ASSOCIATED WITH SITUATIONS INVOLVING
ACUTE RADIOACTIVE CONTAMINATION OF THE ATMOSPHERE ARE
R VIEWED A D T E D FOR AIR FILTRATION SYSTEMS TO
PROTECT PERSONNEL IN VARIOUS TYPES OF STRUCTURES IN
SUCH SITUATIONS I EVALUATED. THIS REPORT CO CERNS
ONLY RADIOACTIVE CONTAMINATION OF THE AIR AND MAKES
NO ATTEMPT TO EVALUATE THE HAZARDS ASSOCIATED WITH
BIOLOGICAL AND CHEMICAL TYPES OF CON AMINATION.
THE MATERIAL WAS DRAWN FROM THE FOLLOWING SOURCES;
(A) THE OPEN LITERATURE AND, TO A LESSER EXTENT,
THE CLASSIFIED LITERA URE; (B) INT RVIEW AND
VISITS TO INSTALLATIONS; AND (C) PERSONAL
EXPERIENCE. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-289 249

ARMY NUCLEAR DEFENSE LAB EDGEMOOD ARSENAL MD
SIMPLE DECONTAMINATION OF RESIDENTIAL AREAS MCCOY-

III

(U)

SEP 62 IV MALONEY, J.C. I MEREDITH, J.L. I
REPT. NO. TR33

UNCLASSIFIED REPORT

DESCRIPTORS: *CIVIL DEFENSE SYSTEMS, *DECONTAMINATION,
*RADIOLOGICAL CONTAMINATION, DISPOSAL, DOSE RATE,
PERSONNEL, RADIOACTIVE FALLOUT, SOILS (U)

A RADIOLOGICAL DECONTAMINATION TEST PROCEDURE TO
DETERMINE EFFECTIVENESS, EFFORT REQUIRED, AND PERSONNEL
DOSE RATE.

UNCLASSIFIED

DUC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-290 532

RAND CORP SANTA MONICA CALIF

SOUTHERN CALIFORNIA IN A THERMONUCLEAR WAR

(U)

IV BRODE, HAROLD L.

UNCLASSIFIED REPORT

DESCRIPTORS: •NUCLEAR WARFARE, •SHELTERS, •SURVIVAL,
CIVIL DEFENSE SYSTEMS

(U)

LIKELIHOOD OF NUCLEAR ATTACK IN SOUTHERN CALIFORNIA,
CHANCE OF SURVIVAL, AND POSSIBLE PROTECTIVE
MEASURES ARE DISCUSSED.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-401 687

STANFORD RESEARCH INST MENLO PARK CALIF

RADIOLOGICAL MONITORING: CONCEPTS AND SYSTEMS (U)

IV

BOTHUM, RICHARD B.; LAURINO, RICHARD

K. I

UNCLASSIFIED REPORT

DESCRIPTORS: •DOSAGE, •RADIATION MONITORS, •RADIOACTIVE
FALLOUT, CIVIL DEFENSE SYSTEMS, INSTRUMENTATION,
MEASUREMENT, RADIATION EFFECTS (U)

RADIOLOGICAL MONITORING: CONCEPTS AND SYSTEMS. EXISTING
AND PROGRAMMED CIVIL DEFENSE RADIOLOGICAL MONITORING
SYSTEMS ARE EVALUATED.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-402 098
HUMAN SCIENCES RESEARCH INC MCLEAN VA
AN APPROACH TO THE STUDY OF SOCIAL AND PSYCHOLOGICAL
EFFECTS OF NUCLEAR ATTACK (U)
MAR 63 IV NORLLIE, PETER G.
REPT. NO. RR 63 3 RR

UNCLASSIFIED REPORT

DESCRIPTORS: *CIVIL DEFENSE SYSTEMS, BEHAVIOR, CULTURE,
DISASTERS, NUCLEAR WARFARE, PSYCHOLOGY, REACTION
(PSYCHOLOGY), SOCIOLOGY, STRESS (PSYCHOLOGY),
SURVIVAL (U)

SOCIAL AND PSYCHOLOGICAL EFFECTS OF NUCLEAR ATTACK.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-403 071

RESEARCH TRIANGLE INST DURHAM N C

RESEARCH TRIANGLE INSTITUTE OPERATIONS RESEARCH
DIVISION.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

APR 63 IV WILLIS, K.E.; BROOKS, E.R.;

DOW, L.J.;

REPT. NO. R 45 1

CONTRACT: OCD 0562 109

PROJ: 4201

UNCLASSIFIED REPORT

DESCRIPTORS: *CIVIL DEFENSE SYSTEMS,
DISPERSION HARDENING, POPULATION, SHELTERS,
COMMUNICATION SYSTEMS, ANALYSIS, SHIELDING,
THERMAL RADIATION, COUNTERMEASURES,
EFFECTIVENESS.

(U)

A CRASH CIVIL DEFENSE PROGRAM IS ONE WHICH IS
IMPLEMENTED ONE TO FOURTEEN DAYS PRIOR TO ATTACK.
IT IS INITIATED BECAUSE OF A POLITICAL OR MILITARY
CRISIS. THIS STUDY IDENTIFIES AND ANALYZES SEVERAL
MEASURES THAT CAN BE EFFECTIVE IN THIS TIME PERIOD IN
DISPERSING AND PROTECTING POPULATION AND RESOURCES.
THE PROBLEMS ASSOCIATED WITH CONSTRUCTING A CRASH
PLAN PRIOR TO IMPLEMENTATION ARE IDENTIFIED, AND SOME
PRINCIPLES FOR CRASH PLANNING ARE GIVEN. THE MAJOR
CONCLUSION IS THAT CRASH PLANNING CAN SIGNIFICANTLY
IMPROVE EXISTING CIVIL DEFENSE CAPABILITIES.
SEVERAL ACTIONS ARE RECOMMENDED WHICH WOULD LEAD TO
OPERATIONAL CRASH PLANNING. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-405 713

ENGINEERING-SCIENCE INC ARCADIA CALIF

THE RECOVERY AND RESTORATION OF METROPOLITAN WATER
WORKS FOLLOWING NUCLEAR WAR ATTACK.

(U)

MAY 63 147P

CONTRACT: OCD 0562 106

UNCLASSIFIED REPORT

DESCRIPTORS: *WATER SUPPLIES, *RADIOLOGICAL
WARFARE, *RADIOLOGICAL CONTAMINATION, *NATIONAL
DEFENSE, DECONTAMINATION, SHELTERS, RADIO ACTIVITY,
CIVIL DEFENSE SYSTEMS, DAMAGE, DISASTERS,
PREPARATION.

(U)

THE EFFECTS OF NUCLEAR WEAPONS AND RADIOACTIVE
FALLOUT ON WATERWORKS FACILITIES AND OPERATIONS; THE
RESPONSE TO THESE FORCES AND THE COUNTERMEASURES TO
PROVIDE THE CAPABILITY FOR RECOVERY HAVE BEEN
CONSIDERED. THE EFFECT FORCES OF DISASTER MAY
HAVE ON EACH OF THE UNITS OF A METROPOLITAN WATER
SUPPLY SYSTEM AND THE RESPONSE OF THE UNIT TO SUCH A
CONDITION ARE STUDIED. APPLICABLE MEASURES OF
REPAIR AND/OR DECONTAMINATION OF SUCH UNITS AND THE
EFFECT OF AN INTERRUPTION IN THE SUPPLY OF WATER
FROM THE SOURCE FACILITY, OR CHANGE IN QUALITY
RENDERING IT UNUSABLE, WAS CONSIDERED AS WELL AS THE
EFFECT A DECREASE IN WATERWORKS OPERATING PERSONNEL
MIGHT HAVE ON THE OVER-ALL OPERATION. THE SCALING
OF THE FORCES OF DISASTER INCLUDED BOTH MINIMUM
CONDITIONS LIKELY TO RESULT IN A SIGNIFICANT EFFECT
ON THE SYSTEM, AND A MAXIMUM CONDITION JUST SHORT OF
COMPLETE DESTRUCTION OF THE ENTIRE SYSTEM.
PROCEDURES FOR USE OF ALTERNATE FACILITIES HAVE
BEEN CONSIDERED FOR THE EVENT THAT PORTIONS OF A
SYSTEM EXPERIENCE DAMAGE TO AN EXTENT PRECLUDING
REPAIR UNDER EMERGENCY CONDITIONS. OPERATIONS
HAVE BEEN GROUPED INTO THE FOLLOWING TIME SEQUENCE
OF EVENTS: PREPARATORY PHASE (ADVANCE
PREPARATION); TENSION PHASE (ALERT - "BUTTONING-
UP"); ATTACK AND SHELTER PHASE (PERSONNEL
PROTECTION); SURVIVAL PHASE (EMERGENCY
OPERATIONS); RECOVERY PHASE (EMERGENCY
RESTORATION); AND RECONSTRUCTION PHASE (SYSTEM
RECONSTRUCTION). (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-408 094

SCIENCE COMMUNICATION INC WASHINGTON D C
RECOVERY AND DECONTAMINATION MEASURES AFTER BIO
LOGICAL AND CHEMICAL ATTACK.

(U)

DESCRIPTIVE NOTE: FINAL REPT.

MAR 63 116P

CONTRACT: OCD 0562 183

UNCLASSIFIED REPORT

DESCRIPTORS: (CHEMICAL WARFARE AGENTS, DE
CONTAMINATION), (BIOLOGICAL WARFARE AGENTS,
DECONTAMINATION), (DECONTAMINATION, CHEMICAL
WARFARE), (DECONTAMINATION, BIOLOGICAL WAR
FARE), (BLEACHING AGENTS, DECONTAMINATION),
HYPOCHLORITES, SAFETY, CIVIL DEFENSE SYSTEMS,
CHEMOTHERAPEUTIC AGENTS, OINTMENTS.

(U)

IDENTIFIERS: 1963, PROTECTIVE OINTMENT CD-V820,
SODIUM HYPOCHLORITE, CALCIUM HYPOCHLORITE.

(U)

PRACTICAL METHODS ARE KNOWN FOR DEALING WITH BIO
LOGICAL AND CHEMICAL CONTAMINATION AFTER ATTACK.
THE NECESSARY MATERIALS AND EQUIPMENT CAN BE OB
TAINED, MUCH OF IT FROM NORMAL PEACETIME SOURCES OF
SUPPLY. THE DECISION AS TO WHETHER OR NOT TO
DECONTAMINATE IN A PARTICULAR SITUATION REQUIRES
CAREFUL CONSIDERATION OF ALL THE FACTORS INVOLVED AND
MUST BE A COMMAND DECISION BY THE LOCAL CIVIL DEFENSE
AUTHORITY. THE DECISION IS ESSENTIALLY THE RESULT
OF A TECHNICAL APPRAISAL OF THE TIME AND EFFORT WHICH
MUST BE EXPENDED IN COMPARISON TO THE CONSEQUENCES IF
DECONTAMINATION IS OMITTED OR DEFERRED. IT CANNOT
BE OVEREMPHASIZED THAT ORGANIZED DECONTAMINATION IS
HARD WORK. IT REQUIRES MEN, EQUIPMENT, AND
MATERIALS THAT ARE SIGNIFICANT RESOURCES FOR OTHER
PHASES OF RECOVERY. YET IT MAY BE VITAL AND OF
SOME IMPORTANCE TO IMPLEMENTING THOSE OTHER PHASES.
NEVERTHELESS, IT SHOULD BE CARRIED OUT ONLY WHEN
THE ADVANTAGES CLEARLY OUTWEIGH THE DISADVANTAGES.

(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-408 967

DUNLAP AND ASSOCIATES INC DARIEN CONN
TESTING CIVIL DEFENSE PLANS AND OPERATIONS AT THE
FEDERAL, STATE AND LOCAL LEVELS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.

MAY 63 121P

CONTRACT: OCD 0562 60

UNCLASSIFIED REPORT

DESCRIPTORS: (*CIVIL DEFENSE SYSTEMS, TESTS),
(*RADIOACTIVE FALLOUT, RADIATION MONITORS),
RADIOLOGICAL CONTAMINATION, RADIATION MEASUREMENT
SYSTEMS, DAMAGE, ANALYSIS, TEST METHODS,
SHELTERS, RADIOLOGICAL DOSAGE, ERRORS, NUCLEAR
WARFARE, NUCLEAR EXPLOSIONS, FOOD, WATER SUP
PLIES, SANITARY ENGINEERING, VENTILATION,
COMMUNICATION SYSTEMS.

(U)

IDENTIFIERS: 1963, DAMAGE ASSESSMENT,
MUSTERING.

(U)

THE FINAL REPORT FOR CONTRACT NO. OCD-05-62-
60 IS ORGANIZED INTO THREE CHAPTERS. CHAPTER I
IS DEVOTED TO A BRIEF DISCUSSION OF THE OVER-ALL
PROBLEM STUDIED DURING THIS CONTRACT. CHAPTER II-
PRESENTS DESCRIPTIONS OF THE THREE TESTS DEVELOPED
DURING THE STUDY, I.E., A MUSTERING PLAN TEST, A
DAMAGE ASSESSMENT TEST, AND A RADIATION ANALYSIS
TEST. THE FINAL CHAPTER PRESENTS THE FORMULATION
OF A SYSTEM ANALYSIS OF THE CIVIL DEFENSE
ORGANIZATION DESIGNED TO IDENTIFY AND QUANTIFY THOSE
FUNCTIONS WITH WHICH CIVIL DEFENSE SHOULD BE
CONCERNED, AND THUS TO PROVIDE A BETTER BASIS FOR
TESTING OF PLANS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-412 431

RADIO CORP OF AMERICA BETHESDA MD
DETERMINATION OF PARAMETERS FOR RADIOLOGICAL
PREDICTION AND MONITORING SYSTEMS, (U)

JUN 63 IV HEIMERS, P.; DIEHM, C.; HOLZ,
B.; KURKJIAN, H.; HATHENAY, D.;
CONTRACT: OCD 0562 140

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIATION MONITORS, GAMMA
EMISSION), (*RADIATION MEASUREMENT SYSTEMS,
RADIOLOGICAL CONTAMINATION), (*CIVIL DEFENSE
SYSTEMS, DATA TRANSMISSION SYSTEMS), MONITORS,
AUTOMATIC, DATA, PROTECTIVE COVERINGS, SHELTERS,
RADIATION ALARMS, COSTS, RELIABILITY, SITE
SELECTION, RADIO COMMUNICATION SYSTEMS, TELE PHONE
COMMUNICATION SYSTEMS, COMMUNICATION SYSTEMS,
DOSAGE, INSTRUMENTATION, COMPUTERS, PLOTTERS,
COMMAND AND CONTROL SYSTEMS, VULNERABILITY,
WEATHER STATIONS, MATHEMATICAL PREDICTION. (U)

IDENTIFIERS: 1963. (U)

RADIOLOGICAL MONITORING SYSTEMS.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-416 493

CURTISS-WRIGHT CORP CALDWELL N J
CIVIL DEFENSE MANUAL FOR RADIOLOGICAL DECONTAMINATION
OF MUNICIPALITIES. (U)
AUG 63 415P CAMHARANU, MARIO V. WHEELER,
C. HERBERT, JR.:

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•RADIOACTIVITY, DECONTAMINATION), (•CIVIL
DEFENSE SYSTEMS, INSTRUCTION MANUALS), CONTAMINATION,
RADIOACTIVE FALLOUT, RADIATION HAZARDS, NUCLEAR
WEAPONS (U)
IDENTIFIERS: 1963, MUNICIPALITIES (U)

THIS MANUAL COVERS THE OPERATIONAL RECOVERY
PHASE OF RADIOLOGICAL DEFENSE, WHICH IS CONCERNED
WITH DECONTAMINATION OF STRUCTURES AND AREAS MADE
DANGEROUS OR LETHAL BY FALLOUT. IT ASSUMES THAT NO
SIGNIFICANT DAMAGE HAS BEEN SUSTAINED IN THE AREA DUE
TO BLAST OR FIRE. THE PURPOSE OF THE MANUAL IS TO
FURNISH INFORMATION AND PLANNING TECHNIQUES WHICH
WILL ENABLE CIVIL DEFENSE PLANNERS TO
FORMULATE AND IMPLEMENT PLANS OF ACTION FOR
OPERATIONAL RECOVERY FROM NUCLEAR ATTACK IN AREAS
SUBJECT TO RADIOACTIVE FALLOUT. THE MANUAL IS
WRITTEN FOR MUNICIPAL PLANNERS AND ENGINEERS,
AND FOR SPECIAL GROUPS, SUCH AS EQUIPMENT OPERATORS
AND MEDICAL DOCTORS, TO WHOM INDIVIDUAL CHAPTERS WILL
BE OF PARTICULAR VALUE AND INTEREST. DETAILED
TECHNICAL INFORMATION ON METHODS OF DECONTAMINATION
IS PRESENTED. THE INSTRUCTIONS COVER THE CLEANING
OF BUILDING STRUCTURES, PAVEMENT, AND NATURAL AREAS.
ONE CHAPTER DEALS WITH COLD WEATHER DECONTAMINATION
PROBLEMS. THE EFFICIENCIES OF DECONTAMINATION
METHODS AND EQUIPMENT ARE EVALUATED IN TERMS OF HUMAN
EFFORT. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-419 006

EDGERTON GERMESHAUSEN AND GRIER INC SANTA BARBARA
CALIF

RADIOLOGICAL MONITORING FOR CIVIL DEFENSE.

(U)

AUG 63 123P

REPT. NO. S 235 H

CONTRACT: OCD-05-62-172

UNCLASSIFIED REPORT

DESCRIPTORS: (CIVIL DEFENSE SYSTEMS, RADIATION
MEASUREMENT SYSTEMS), (RADIATION MONIT RADIOACTIVE
FALLOUT), INSTRUMENTATION, RADIATION HAZARDS,
AERIAL RECONNAISSANCE, AUTOMATION, COMMUNICATION
SYSTEMS, DATA TRANSMISSION SYSTEMS,
MOBILIZATION.

(U)

IDENTIFIERS: 1963.

(U)

RADIOLOGICAL MONITORING AND FALLOUT PREDICTION
CONCEPTS OF THE PRESENT CIVIL DEFENSE PROGRAM ARE
PRESENTED AND RECOMMENDATIONS MADE FOR IMPROVING THE
PROGRAM. THE CONCLUSIONS AND RECOMMENDATIONS
RESULT FROM A DETAILED STUDY OF THE RADIOLOGICAL
INFORMATION NEEDS AND VARIOUS RADIOLOGICAL MONITORING
METHODS. THIS STUDY INCLUDED INSTRUMENTATION AND
EQUIPMENT, SMALL SCALE PERTURBATIONS OF THE RADIATION
FIELD BY VARIOUS FACTORS, AND FALLOUT PREDICTION
METHODS. THE RECOMMENDATIONS MADE INCLUDE USING
AERIAL MONITORING TECHNIQUES AS THE PRIMARY
RADIOLOGICAL MONITORING METHOD AND CONSIDERING THE
USE OF A FIXED AUTOMATIC SYSTEM AT THE NATIONAL LEVEL
ONLY. OTHER SPECIFIC RECOMMENDATIONS INVOLVE
INSTRUMENTATION, TRAINING, AND ORGANIZATION.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-420 472

CORNELL AERONAUTICAL LAB INC BUFFALO N Y
RADIOLOGICAL TARGET ANALYSIS PROCEDURES,
140P RYLL,EWALD ;

(U)

REPT. NO. VP1099G1

CONTRACT: OCD 0562 207

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*DECONTAMINATION, URBAN AREAS),
(*RADIOACTIVE FALLOUT, DECONTAMINATION), CIVIL DEFENSE
SYSTEMS, OPERATIONS RESEARCH, PROGRAMMING (COMPUTERS),
MATHEMATICAL ANALYSIS, SCHEDULING, OPTIMIZATION, DOSE
RATE, RADIOACTIVE DECAY, RADIOLOGICAL WARFARE,
SHIELDING

(U)

IDENTIFIERS: 1963

(U)

SYSTEM ASPECTS OF LARGE SCALE DECONTAMINATION OF
POPULATED AREAS WERE STUDIED TO DETERMINE OPTIMAL
DECONTAMINATION PROCEDURES FOR SMALLSCALE AREAS.
SIMPLE TECHNIQUES HAVE BEEN DEMONSTRATED THAT A
POPULATED AREA OF 700,000 PEOPLE EXPOSED TO FALLOUT
FROM A 1 MT ATTACK OUTSIDE OF THE AREA CAN BE
RESTORED IN ROUGHLY 1 MONTH. ANALYSIS WAS CONDUCTED
OF SCHEDULING THE ENTRY OF OPERATORS INTO A
RADIOACTIVE FIELD. TECHNIQUES SIMILAR TO DYNAMIC
PROGRAMMING WERE APPLIED, WITH THE RESULT THAT FOR
CERTAIN CIRCUMSTANCES SPECIFIC OPTIMAL START TIMES
CAN BE DETERMINED. COMPUTATIONAL PROCEDURES AND
COMPUTER PROGRAMS HAVE BEEN EVOLVED FOR TESTING
PROCEDURES IN SIMULATED ENVIRONMENTS. SUBSTANTIAL
ANALYSIS WAS PERFORMED ON THE SHIELDING EFFECT OF
STRUCTURES IN A TARGET AREA. (AUTHOR)

(U)

UNCLASSIFIED

DGC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-422 411

NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF
THERMAL RADIATION AND FIRE EFFECTS OF NUCLEAR
DETONATIONS.

(U)

MAY 63 48P MARTIN, S. BROID, A. I
MONITOR: DASA, NRDL 13761, TR652

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (NUCLEAR EXPLOSION DAMAGE, THERMAL
RADIATION), (FIRES, NUCLEAR EXPLOSION DAMAGE),
NUCLEAR EXPLOSIONS, URBAN AREAS, FIRE SAFETY, NUCLEAR
WEAPONS, DAMAGE, SURVIVAL, CIVIL DEFENSE SYSTEMS,
BURNS, IGNITION, EXPOSURE, DAMAGE CONTROL

(U)

IDENTIFIERS: 1963

(U)

AN UNCLASSIFIED STATE-OF-THE-ART REVIEW OF THE
THERMAL EFFECTS OF NUCLEAR WEAPONS, THIS REPORT
SUMMARIZES THE PERTINENT INFORMATION AVAILABLE AT THE
END OF 1962. EVIDENCE IS PRESENTED TO SHOW THAT,
IN A NUCLEAR WEAPON ATTACK ON TARGETS IN URBAN AND
RURAL AREAS, THERMAL RADIATION AND FIRE CAN BE
EXPECTED TO MAKE A MAJOR CONTRIBUTION TO THE
DESTRUCTION OF LIFE AND PROPERTY. THE
CHARACTERISTICS OF THE EMITTED THERMAL RADIATION, THE
RADIANT EXPOSURE AS A FUNCTION OF DISTANCE, AND THE
EFFECTS PRODUCED BY THIS RADIATION ARE SUMMARIZED.
THE FORMATION, SPREAD, AND CONTROL OF FIRES AND
POSSIBILITIES FOR SURVIVAL IN FIRE ZONES ARE
DISCUSSED. FIRE COUNTERMEASURES WHICH MIGHT PROVE
EFFECTIVE IN REDUCING THE EXTENT OF THERMAL DAMAGE
ARE SET FORTH. (AUTHOR)

(U)

UNCLASSIFIED

/BML27

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-432 345

TRACERLAB RICHMOND CALIF

RADIOLOGICAL MONITORING STUDY.

(U)

NOV 63 251P BAIETTI, A. L. IZIRKES, A. I

CONTRACT: OCD OS 62 151

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•RADIATION MONITORS, CIVIL DEFENSE
SYSTEMS), (•RADIOACTIVE FALLOUT, RADIATION MEASUREMENT
SYSTEMS), MOBILE, NUCLEAR WARFARE, RADIATION HAZARDS,
MATHEMATICAL MODELS, COSTS, VEHICLES, PNEUMATIC SYSTEMS,
WARNING SYSTEMS, DETECTORS, JOSE RATE, DATA PROCESSING
SYSTEMS, COMMUNICATION SYSTEMS (U)

IDENTIFIERS: 1963 (U)

THIS STUDY EVALUATED RADIOLOGICAL MONITORING
SYSTEMS FOR USE FOLLOWING A NUCLEAR ATTACK. THE
RECOMMENDED SYSTEM USES A COMBINATION OF FLASH
REPORTS FOR PREPARING FALLOUT CONTOUR MAPS,
UNSHIELDED LAND VEHICLES, AND MONITORING ON
FOOT. THE MAJOR ADVANTAGES OF THIS COMBINATION
ARE LOW COST, SIMPLICITY, AND LOW PERSONNEL EXPOSURE.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-434 091

STANFORD RESEARCH INST MENLO PARK CALIF

VULNERABILITY OF MUNICIPAL WATER FACILITIES TO
RADIOACTIVE CONTAMINATION FROM NUCLEAR ATTACKS, (U)

MAR 64 56P LEE, HUNG I

CONTRACT: OCD 0563 149

PROJ: IM4536

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•WATER SUPPLIES, RADIOLOGICAL
CONTAMINATION), (•RADIOLOGICAL CONTAMINATION, WATER
SUPPLIES), NUCLEAR WARFARE, CIVIL DEFENSE SYSTEMS,
RADIOACTIVE FALLOUT, RADIATION HAZARDS, SIMULATION,
RADIOLOGICAL DOSAGE, STRONTIUM, RADIATION EFFECTS,
VULNERABILITY (U)

IDENTIFIERS: RADIONUCLIDES, 1964 (U)

IN THE EVENT OF A NUCLEAR ATTACK UPON THE UNITED STATES, THE SURFACE SOURCE WATERS WOULD BECOME CONTAMINATED WITH RADIOACTIVE NUCLIDES CARRIED BY FALLOUT PARTICLES. THE ABSORBED DOSAGE IN THE BODY TISSUES OF HUMANS RESULTING FROM DRINKING CONTAMINATED SURFACE WATERS, ESPECIALLY AFTER THE WATER IS PROCESSED IN TREATMENT PLANTS, IS NOT CRITICAL. IN AREAS WHERE HEAVY LEVELS OF FALLOUT OCCUR, THE OVERRIDING HAZARD FACING THE SURVIVORS IS EXTERNAL RADIATION. CONTAMINATED WATER IS A SECONDARY PROBLEM FACING SURVIVORS IN THE POSTATTACK ENVIRONMENT. ALSO, A LARGE PROPORTION OF THE POSTATTACK POPULATION WILL HAVE UNCONTAMINATED GROUND SOURCE WATER AVAILABLE, AND, IF THIS WATER IS PROPERLY HANDLED AFTER IT IS DRAWN FROM WELLS, IT WILL REMAIN CLEAN. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-601 341

IIT RESEARCH INST CHICAGO ILL

AN APPROACH TO TRANS-ATTACK FIRE SUPPRESSION IN URBAN
AREAS. (U)

DESCRIPTIVE NOTE: FINAL REPT.

MAR 64 115P SALZBERG, F. ; MAATHAN, G. L. ;

VODVARKA, F. J. ;

CONTRACT: OCD 0562 210

PROJ: N6005

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•FIRES, BUILDINGS), (•FIRES, URBAN AREAS),
(•NUCLEAR EXPLOSIONS, FIRES), CIVIL DEFENSE SYSTEMS;
FURNITURE, EXPLOSION EFFECTS, FIREFIGHTING VEHICLES;
FIRE EXTINGUISHERS, WATER SUPPLIES, ILLINOIS (U)

IT WAS DETERMINED THAT, IN AN URBAN AREA EXPOSED TO
A NUCLEAR BURST, THE SUPPRESSION OF THE LARGE NUMBER
OF FIRES WHICH WILL OCCUR MUST NECESSARILY INCLUDE
EFFORTS OF UNTRAINED PERSONNEL (SELF-HELP), AND
TRAINED CIVILIAN BRIGADES IN ADDITION TO PUBLIC FIRE
DEPARTMENTS. THE EFFECTIVENESS OF PERSONNEL AND
THE AMOUNT OF WATER REQUIRED TO SUPPRESS FIRES ON THE
LEVEL OF SELFHELP AND BRIGADES WERE DETERMINED FROM
EXPERIMENTS PER FORMED IN THE LABORATORY AND IN
ACTUAL STRUCTURES. FIRE DEPARTMENT OPERATIONS WERE
ANALYZED USING DATA GATHERED ON CERTAIN SELECTED
ACTUAL BUILDING FIRES IN THE GREATER CHICAGO
METROPOLITAN AREA. IT WAS FOUND THAT PUBLIC
FIRE DEPARTMENTS ARE PRESENTLY USING MUCH LARGER
QUANTITIES OF WATER TO CONTROL DWELLING FIRES THAN
THAT REQUIRED IN THE EXPERIMENTAL STUDIES. IN
GENERAL, RURAL AND SMALL URBAN FIRE DEPARTMENTS WERE
FOUND TO BE USING CONSIDERABLY LESS WATER THAN LARGE
URBAN AREA FIRE DEPARTMENTS, DUE PARTLY TO INHERENT
LIMITATIONS IN AVAILABLE EQUIPMENT AND WATER
SUPPLIES. CRITERIA ARE GIVEN FOR THE NUMBER OF
SELF-HELP AND BRIGADE TEAMS REQUIRED TO SUPPRESS A
GIVEN NUMBER OF FIRES INITIATED BY THE THERMAL PULSE.
VARIOUS ASPECTS OF FIRE DEPARTMENT OPERATIONAL
NEEDS DURING A NUCLEAR EMERGENCY ARE DISCUSSED.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-601 467

HUGHES AIRCRAFT CO FULLERTON CALIF

OOD SOFT TARGET STUDY.

(U)

DESCRIPTIVE NOTE: FINAL REPT.

APR 64 213P

REPT. NO. FR-64-16-66

CONTRACT: OOD 0562 277

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (CIVIL DEFENSE SYSTEMS, EFFECTIVENESS),
SHELTERS, NUCLEAR EXPLOSION DAMAGE, NUCLEAR WARFARE
CASUALTIES, RADIATION EFFECTS, COSTS, PROGRAMING
(COMPUTERS), COMPUTERS

(U)

THIS REPORT DESCRIBES METHODOLOGY AND ORIGINAL
COMPUTER PROGRAMS WHICH HAVE BEEN DEVELOPED TO ASSIST
IN THE ACCOMPLISHMENT OF THE STUDY OBJECTIVE. TWO
COMPUTER PROGRAMS ARE EMPHASIZED. THE DYNAMIC
ANALYZER PROGRAM CALCULATES THE EFFECTIVENESS OF
SPECIFIED SHELTER SYSTEMS IN PROTECTING THE
POPULATION FROM PARTICULAR ATTACKS. POPULATION
MOBILITY AND FALLOUT FIELDS WHICH DEPEND ON BOTH TIME
AND POSITION ARE CONSIDERED. THE WEIGHTED-
STRATEGY, MULTIPLE SHELTER TYPE MIX AND
LOCATION OPTIMIZER COMPUTES THE OPTIMAL
EFFECTIVENESS VERSUS COST CURVE OVER THE RANGE FROM
ZERO COST TO THE COST OF THE MOST EFFECTIVE SYSTEM
POSSIBLE WITH A GIVEN SHELTER CATALOG. THIS
PROGRAM ALSO DETERMINES THE MIX AND DEPLOYMENT OF
SHELTERS AT DESIRED COST/EFFECTIVENESS LEVELS.
SOFT TARGET STUDY ACTIVITY HAS SHOWN THAT THERE
IS A DIFFERENCE IN THE INTENSITY AND RELATIVE
INTENSITY OF THE DIFFERENT WEAPON EFFECTS FOR CITIES
NEAR SOFT AND HARD TARGETS. HOWEVER, ALL WEAPON
EFFECTS NEED TO BE CONSIDERED FOR BOTH CASES. THE
SIGNIFICANCE OF THIS FACT IS THAT THE PROCEDURES
DEVELOPED UNDER THE SOFT TARGET STUDY MAY BE
APPLIED TO THE STUDY OF CIVIL DEFENSE
COUNTERMEASURES FOR CITIES IN ANY TARGETING
SITUATION. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-602 677

STANFORD RESEARCH INST MENLO PARK CALIF
VULNERABILITY TO NUCLEAR ATTACK OF THE WATER
TRANSPORTATION SYSTEMS OF THE CONTIGUOUS UNITED
STATES, (U)

MAY 64 1964 ANDREWS, BENJAMIN V. ; DIXON,

HARVEY L. ;

CONTRACT: OCD 056J 149

PROJ: IMU4536 421

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•NUCLEAR WARFARE, DAMAGE), (•WATER
TRAFFIC, VULNERABILITY), INLAND WATERWAYS, SHIPS, PIERS,
PERSONNEL, NUCLEAR EXPLOSION DAMAGE, REDUCTION,
MATHEMATICAL ANALYSIS, CIVIL DEFENSE SYSTEMS (U)

THIS REPORT CONTAINS AN ANALYSIS OF THE
VULNERABILITY OF THE U. S. DOMESTIC WATER
TRANSPORTATION SYSTEMS TO NUCLEAR ATTACK. THE
BASIC ANALYTICAL PROCEDURE WAS TO DEVELOP INVENTORY
DATA, ASSESS THE DAMAGE TO THE INVENTORY FOR A RANGE
OF NUCLEAR ATTACKS, IDENTIFY THOSE PARTS OF THE WATER
TRANSPORTATION SYSTEMS THAT APPEARED MOST VULNERABLE
TO NUCLEAR ATTACK, AND SUGGEST MEANS TO REDUCE THE
VULNERABILITY. THIS BASIC PROCEDURE WAS FOLLOWED
FOR THE FOUR MAJOR COMPONENTS OF THE WATER
TRANSPORTATION SYSTEMS: (1) WATERWAYS, (2)
VESSELS, (3) TERMINALS, AND (4) PERSONNEL.
STATISTICAL DATA ARE PROVIDED IN THE APPENDIXES FOR
EACH OF THESE COMPONENTS. (AUTHOR) (U)

UNCLASSIFIED

UDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-603 640

CURTISS-WRIGHT CORP CALDWELL N J

A PROTOTYPE MANUAL FOR PLANNING, ANALYZING AND
SCHEDULING FOR RADIOLOGICAL EXPOSURE, (U)

MAY 64 66P CAMMARANO, MARIO V. :

CONTRACT: OCD 0562 279

TASK: 3236A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*NUCLEAR PARTICLES, DISTRIBUTION),
(*RADIOACTIVE FALLOUT, DECONTAMINATION), (*CIVIL DEFENSE
SYSTEMS, URBAN AREAS), NUCLEAR EXPLOSIONS, RADIATION
EFFECTS, HEALTH PHYSICS, RADIATION TOLERANCE,
RADIOLOGICAL DOSAGE, DOSE RATE, DOSIMETERS, RADIATION
DAMAGE, SHELTERS, INSTRUCTION MANUALS, SCHEDULING (U)

THE REPORT ELUCIDATES A PLANNING STRATEGY DESIGNED
FOR USE DURING THE POST-ATTACK PHASE OF A NUCLEAR
ATTACK. THE REPORT ALSO PRESENTS THE PLANNING
ASSUMPTIONS AND TECHNIQUES SPECIFICALLY EXPRESSED IN
THE SECOND EDITION OF 'A PROTOTYPE CIVIL
DEFENSE MANUAL FOR RADIOLOGICAL
DECONTAMINATION OF MUNICIPALITIES'. INCLUDED
IS A DESCRIPTION OF THE POST-ATTACK PICTURE, AND A
DISCUSSION OF THE CHARACTERISTICS OF THE RADIATION
FIELD WITH RESPECT TO TIME AFTER DETONATION AND
DISTANCE FROM GROUND ZERO. THE MATHEMATICAL BASIS
FOR, AND OPERATION OF A DOSE ACCUMULATION
ANALYZER, ARE PRESENTED. THE ANALYZER IS
DESIGNED TO YIELD FAST, ACCURATE INFORMATION ON THE
PROBABLE DOSE ACCUMULATION IN PERSONNEL RESULTING
FROM ANY DESIRED EXPOSURE SCHEDULE. DATA
CONCERNING AREA ENTRY TIME, MINIMUM SHELTER STAY
TIME, OPTIMUM STARTING TIMES FOR WORK CREWS, OPTIMUM
EVACUATION TIME, AND DECONTAMINATION FEASIBILITY, FOR
ANY COMBINATION OF STANDARD DOSE RATE AND
RESIDUAL NUMBER, EFFECTIVE FALLOUT ARRIVAL
TIME, AND ANY ALLOWED DOSE CRITERION CAN BE
OBTAINED FROM THE ANALYZER. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-606 326

RAND CORP SANTA MONICA CALIF
ECOLOGICAL PROBLEMS AND POSTWAR RECUPERATION: A
PRELIMINARY SURVEY FROM THE CIVIL DEFENSE VIEWPOINT.

(U)

AUG 61 10P MITCHELL, M. M. I

REPT. NO. RM-2801-PR

CONTRACT: AF49 638 700

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPT. ON PROJ. RAND.

DESCRIPTORS: (*ECOLOGY, CIVIL DEFENSE SYSTEMS), (*CIVIL
DEFENSE SYSTEMS, ECOLOGY), FOOD, ANIMALS, GROWTH,
REPRODUCTION (PHYSIOLOGY), RADIOLOGICAL CONTAMINATION,
RADIOACTIVE FALLOUT, RADIATION DAMAGE, DECONTAMINATION,
FOREST FIRES, AGRICULTURE, POPULATION, PLANTS (BIOLOGY),
BACTERIA, FUNGI, MUTATIONS, NUCLEAR WARFARE (U)

THIS DOCUMENT CALLS ATTENTION TO THE NEED FOR
ASSESSING AND SOLVING ECOLOGICAL PROBLEMS IN THE
POST-ATTACK ENVIRONMENT AS AN INTEGRAL PART OF
CIVIL DEFENSE. BASIC ECOLOGICAL PRINCIPLES
INVOLVING FOOD CHAIN RELATIONSHIPS, CLIMAX GROWTH,
BIOLOGICAL AND ENVIRONMENTAL RELATIONSHIP, AND LAND
MANAGEMENT ARE CONSIDERED. THE LARGE-SCALE DAMAGE
DUE TO FIRE, DROUGHT, FLOOD AND OTHER THINGS HAS
ALREADY PRESENTED THE WORLD WITH PROBLEMS OF
RECONSTRUCTION AND RECONSTITUTION OF BIOTIC
COMMUNITIES WHICH ARE SIMILAR TO THOSE ENVISIONED IN
THE POST-ATTACK ENVIRONMENT. THE ONLY
QUALITATIVELY NEW ELEMENT IN THE POST-ATTACK
SITUATION WILL BE THE EFFECTS OF RADIATION. THE
AVAILABLE INFORMATION ON THIS SUBJECT IS SUMMARIZED
AND THE NEED FOR EXTENSIVE FURTHER RESEARCH IS
POINTED OUT. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-608 479

RESEARCH TRIANGLE INST DURHAM N C
RADIOLOGICAL RECOVERY CONCEPTS, REQUIREMENTS, AND
STRUCTURES. (U)

DESCRIPTIVE NOTE: SUMMARY REPT. (FINAL).,

OCT 64 BP RYAN, J. T. DOUGLASS, J. D. .
JR. CAMPBELL, H. E. ;

TASK: 3233B

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (CIVIL DEFENSE SYSTEMS, RECOVERY),
(NUCLEAR WARFARE, RECOVERY), (RADIOACTIVE FALLOUT,
DECONTAMINATION), STRUCTURES, RADIOLOGICAL
CONTAMINATION, COSTS, FEASIBILITY STUDIES, SURVIVAL,
URBAN AREAS (U)

THE REPORT IS A SUMMARY OF THE TWO VOLUME FINAL
REPORT. THE OBJECTIVE OF THE RESEARCH WAS TO
ANALYZE DECONTAMINATION OPERATIONS TO DETERMINE THEIR
COSTS, FEASIBILITY, AND POTENTIAL CONTRIBUTION TO
ACCELERATING RECOVERY IN A POSTATTACK FALLOUT
ENVIRONMENT. THIS OBJECTIVE WAS MET BY DETERMINING
ALTERNATIVE TIMES, AND ASSOCIATED DECONTAMINATION
RESOURCES, REQUIRED TO RESUME A WORK SCHEDULE, AS A
FUNCTION OF DECONTAMINATION EFFORT. THE PRINCIPAL
MEASURE OF EFFECTIVENESS WAS THE TIME SAVED IN
RESUMING THE SCHEDULE. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-609 917

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
PROTECTING THE POPULATION FROM BACTERIOLOGICAL
WARFARE WEAPONS, (U)

JAN 65 SOP BEZDENEZHNYKH, I. I TYRKOVA, E. I
MONITOR: FTD ,TT TT64 29; ,65 40702

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. OF MONO.
ZASHCHITA NASELENIYA OT BAKTERIOLOGICHESKOGO
ORUZHIA, MOSCOW, 1963, 48P.

DESCRIPTORS: (•BIOLOGICAL WARFARE, CIVIL DEFENSE
SYSTEMS), (•CIVIL DEFENSE SYSTEMS, BIOLOGICAL WARFARE),
BIOLOGICAL WARFARE AGENTS, CIVILIAN PERSONNEL, BACTERIA,
PATHOLOGY, INSECTS, RODENTS, INFECTIOUS DISEASES, TOXINS
AND ANTITOXINS, BACTERIAL AEROSOLS, IMMUNITY, IMMUNE
SERUMS, ANTIBIOTICS, GERMICIDES, CHEMOTHERAPEUTIC
AGENTS, SANITARY ENGINEERING, BIOLOGICAL CONTAMINATION,
DECONTAMINATION, SHELTERS, FOOD, PROTECTIVE CLOTHING,
WARNING SYSTEMS (U)

THIS SOVIET REPORT DISCUSSES THE LIFE-DESTROYING
POWER POSSESSED BY BACTERIOLOGIC WEAPONS. LETHAL
EFFECTS ARE DESCRIBED IN POPULAR TERMS IN THE BOOKLET
WHICH IS AIMED AT A BROAD SECTION OF THE READING
PUBLIC. PARTICULAR ATTENTION IS PAID TO THE MEANS
AND WAYS OF PROTECTING THE CIVILIAN POPULATION IN
CASE OF A BACTERIOLOGIC ATTACK. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-613 359

UNITED RESEARCH SERVICES CORP BURLINGAME CALIF
PREDICTION MODELS FOR FIRE SPREAD FOLLOWING NUCLEAR
ATTACKS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.

JAN 65 182P

REPT. NO. URS-641-6

TASK: 4611C

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: ALSO INCLUDE SUMMARY REPT. BY P. V.
PHUNG AND A. B. WILLOUGHBY.

DESCRIPTORS: (•FIRES, NUCLEAR WARFARE), (•NUCLEAR
WARFARE, FIRES), NUCLEAR EXPLOSION DAMAGE, NUCLEAR
WEAPONS, FLAMES, PROPAGATION, MATHEMATICAL PREDICTION,
MATHEMATICAL MODELS, FIRE SAFETY, CIVIL DEFENSE SYSTEM (U)

IN PART I A SEMIEMPIRICAL APPROACH IS USED TO
PREDICT FIRE SPREAD BEYOND THE AREA DIRECTLY IGNITED
BY THERMAL RADIATION FROM NUCLEAR WEAPONS.
MATHEMATICAL MODELS, BOTH STOCHASTIC AND
DETERMINISTIC, DESCRIBE THE PROGRESS OF FIRES IN TWO-
DIMENSIONAL OR ONE-DIMENSIONAL SPACE. APPLICATION
OF EACH MODEL TO APPROPRIATE CASES IS DISCUSSED.
EMPIRICAL DATA NEEDED FOR EVALUATION OF PARAMETERS
ARE SPECIFIED AND METHODS FOR ACQUIRING THESE DATA
SUGGESTED. OBSERVED DATA, ACCUMULATED OVER MANY
YEARS IN RECORDS OF PAST FIRES, HAVE PROVED VALUABLE
IN DETERMINING SOME OF THE PARAMETERS. THE
REMAINING PARAMETERS REQUIRE FURTHER OBSERVED DATA.
AT PRESENT APPROXIMATE PREDICTION CAN BE MADE BY
USE OF A SPECIALLY DESIGNED VERSION. PART II
PRESENTS THE RESULTS OF A STATISTICAL STUDY ON
OBSERVED RATE OF SPREAD DATA AND DISCUSSES A NUMBER
OF SPECIFIC PROBLEMS THAT MUST BE WORKED OUT BEFORE
THE METHOD CAN BE USED FOR ASSESSING THE FIRE DAMAGE
FROM NUCLEAR ATTACKS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-613 637

HUDSON INST INC HARMON-ON-HUDSON N Y
CHANGING PROSPECTS, MISSIONS AND ROLES FOR CIVIL
DEFENSE: 1965-1975.

(U)

FEB 65 47P BROWN, WILLIAM M. ;CASTIL,
RAYMOND D. ;KAHN, HERMAN ;WIENER, ANTHONY J. ;

REPT. NO. MI-477-RR
CONTRACT: OCD OS62 18
TASK: 4211A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (CIVIL DEFENSE SYSTEMS, EFFECTIVENESS),
COLD WAR, WARNING SYSTEMS, DEFENSE SYSTEMS, ARMS
CONTROL, DETERRENCE, STRATEGIC WARFARE, NUCLEAR WARFARE,
SHELTERS, USSR, UNITED STATES (U)

THE MAJOR CONCLUSION FOR CIVIL DEFENSE PLANNING IS
THAT SMALL OR INTRAWAR ATTACKS, ARISING OUT OF DEEP
CRISES, ARE THE EASIEST AND CHEAPEST TO PREPARE
AGAINST, APPARENTLY THE LEAST UNLIKELY, AND YET AMONG
THE MOST NEGLECTED OF CIVIL DEFENSE CONTINGENCIES.
WHILE THE POSSIBILITY OF MASSIVE SURPRISE ATTACK
SHOULD NOT BE IGNORED, THE RELATIVE OVEREMPHASIS UPON
IT HAS HAMPERED REALISTIC PLANNING EFFORTS. A MORE
REALISTIC ALLOCATION OF PLANNING EMPHASES LEADS TO
INCREASED INTEREST IN CIVIL DEFENSE AND EMERGENCY
PLANNING PROGRAMS CONTAINING SOME OR ALL OF THE
FOLLOWING ELEMENTS: (1) A CRISIS MOBILIZATION
BASE; (2) A TENSION MOBILIZATION BASE; (3) A
POST-ATTACK RECUPERATION BASE; (4) POSSIBLE ARMS
CONTROL AND INCREASED DEFENSE AGREEMENTS, INCLUDING
COOPERATIVE CIVIL DEFENSE; AND (5) PROGRAMS THAT
VARY PROTECTION WITH POPULATION DENSITY TO REDUCE THE
LUCRATIVENESS OF POPULATION TARGETS. STRATEGIC AND
POLITICAL ASPECTS OF SUCH PROGRAM ELEMENTS ARE
DISCUSSED, AND, ON BALANCE, THEY ARE RECOMMENDED.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-614 908

ADVANCE RESEARCH INC NEEDHAM HEIGHTS MASS
CRITICAL INDUSTRY REPAIR ANALYSIS, FOOD
INDUSTRY.

(U)

DESCRIPTIVE NOTE: FINAL REPT. FOR JUN 63-APR 65,
APR 65 375P FERNALD, OLAF H. IBULL, THOMAS

D. I

REPT. NO. CIRA-3

CONTRACT: OCD OS62 257

TASK: 3311A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD 419 518.

DESCRIPTORS: (*CIVIL DEFENSE SYSTEMS, FOOD), (*FOOD,
INDUSTRIAL PRODUCTION), (*NUCLEAR EXPLOSION DAMAGE,
INDUSTRIAL PLANTS), (*INDUSTRIAL PLANTS, NUCLEAR
EXPLOSION DAMAGE), (*NUCLEAR WARFARE, FOOD), EXPLOSION
EFFECTS, VULNERABILITY, ANALYSIS, FLOUR, MEAT, SEA FOOD,
FRUITS, PACKAGING, TRANSPORTATION, FOOD DISPERSING,
FUELS, RADIOACTIVE FALLOUT, STORAGE (U)

THE AMERICAN FOOD INDUSTRY IS ANALYZED IN TERMS
OF VULNERABILITY AND POSTATTACK REPAIR. PROCESSING
PLANTS IN EIGHT SPECIFIC SEGMENTS OF THE INDUSTRY ARE
SELECTED ON THE BASIS OF ESSENTIALITY AND
VULNERABILITY: FLOUR, YEAST, SUGAR, CITRUS FRUIT,
EDIBLE OILS, FISH, MEAT, AND PACKAGING (CANS AND
CARTONS). VULNERABILITIES OF THE PLANTS VARY BY A
WHOLE ORDER OF MAGNITUDE. THE MOST VULNERABLE
PLANT FACES TOTAL DESTRUCTION AT A RELATIVELY LOW 1.2
PSI BLAST OVERPRESSURE, AND THE LEAST VULNERABLE
PLANT IS STILL REPAIRABLE AFTER A BLAST OF UP TO 12.0
PSI. THE OLDER, MORE MASSIVELY BUILT PLANTS ARE
GENERALLY LEAST VULNERABLE, HENCE PRESENT THE FEWEST
REPAIR PROBLEMS AT ANY GIVEN BLAST LEVEL. THERE
ARE TWO GENERAL CONCLUSIONS. FIRST, A SEVERE
SHORTAGE OF BOTH RAW AND PROCESSED FOOD STUFFS IS
IMPROBABLE, BECAUSE FOOD MANUFACTURERS ARE BOTH
NUMEROUS AND GEOGRAPHICALLY DISPERSED. SECOND,
FOOD IN ONE FORM OR ANOTHER, INCLUDING AMPLE RESERVES
IN THE FORM OF STORED, SURPLUS COMMODITIES, WILL BE
AVAILABLE BUT MUST BE TRANSPORTED. AN ADEQUATE
SUPPLY OF PETROLEUM IS ESSENTIAL TO INSURE THE
TRANSPORTATION WHICH WILL PROVIDE THE FOOD SUPPLY.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /B4L27

AD-614 925

UNITED RESEARCH SERVICES CORP BURLINGAME CALIF
EFFECTS OF FIRE ON STRUCTURAL DEBRIS PRODUCED BY
NUCLEAR BLAST. (U)

DESCRIPTIVE NOTE: RESEARCH REPT.,

JAN 65 114P

ROTZ, J. EDMUNDS, J. E. IKAPLAN.

K. I

REPT. NO. URS-639-9

TASK: 3312B

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: INCLUDES SUMMARY REPT. OF STRUCTURAL
DEBRIS CAUSED BY NUCLEAR BLAST, URS-639-4.

LIMITED NUMBER OF COPIES CONTAINING COLOR OTHER THAN BLACK
AND WHITE ARE AVAILABLE UNTIL STOCK IS EXHAUSTED.
REPRODUCTIONS WILL BE MADE IN BLACK AND WHITE ONLY.

DESCRIPTORS: (•NUCLEAR EXPLOSIONS, FIRES), (•FIRES,
NUCLEAR EXPLOSIONS), AIRBURST, DEGRADATION, STRUCTURES,
EXPLOSION EFFECTS, NUCLEAR EXPLOSION DAMAGE, CIVIL
DEFENSE SYSTEMS (U)

THE CHIEF OBJECTIVE OF THIS PHASE OF THE PROGRAM IS
TO EVALUATE FIRE EFFECTS ON DEBRIS PRODUCED BY
NUCLEAR WEAPONS. THE MAGNITUDE OF FIRE FROM
NUCLEAR WEAPONS AS A MAJOR AGENT OF DESTRUCTION IS
DISCUSSED. THE AFTERMATH OF BLAST AND FIRE IS THEN
EVALUATED IN TERMS OF DEBRIS. FIRE EFFECTS ON
SPECIFIC TYPES OF STRUCTURES, ARE DISCUSSED WITH
RESPECT TO DETERMINATION OF RESULTING CHANGES IN
DEBRIS QUANTITIES. DATA FROM MAJOR FIRES ARE USED
TO AUGMENT THIS PORTION OF THE STUDY. THE PERCENT
OF DEBRIS VS OVERPRESSURE CURVES (DEVELOPED IN THE
FIRST PHASE OF THE PROGRAM TO PREDICT THE AMOUNT OF
DEBRIS FORMED BY AIR BLAST) ARE ALTERED TO REFLECT
THE COUPLED EFFECTS OF BLAST AND FIRE. AN EXAMPLE
EMPLOYING DATA, TECHNIQUES, AND KNOWLEDGE DEVELOPED
IN THE PROGRAM IS PRESENTED. THIS TAKES THE FORM OF
DETERMINATION OF DEBRIS DEPTHS ALONG A ROUTE THROUGH
A STRICKEN CITY. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-615 156

UNITED RESEARCH SERVICES CORP BURLINGAME CALIF
EFFECTS OF FIRE ON STRUCTURAL DEBRIS PRODUCED BY
NUCLEAR BLAST. (U)

DESCRIPTIVE NOTE: SUMMARY REPT.,

64 15P ROTZ, J. EDMUNDS, J. E. IKAPLAN,

K. I

REPT. NO. URS-639-9

TASK: 33128

UNCLASSIFIED REPORT

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COLOR OTHER THAN BLACK AND WHITE ARE AVAILABLE UNTIL STOCK
IS EXHAUSTED. REPRODUCTIONS WILL BE MADE IN BLACK AND
WHITE ONLY. SEE ALSO AD-614 925.

DESCRIPTORS: (•NUCLEAR EXPLOSIONS, FIRES), (•FIRES,
NUCLEAR EXPLOSIONS), NUCLEAR EXPLOSION DAMAGE,
STRUCTURES, AIRBURST, DEGRADATION, EXPLOSION EFFECTS,
CIVIL DEFENSE SYSTEMS, BLAST (U)

THE INVESTIGATION HAS REVEALED THAT FIRE IS A MAJOR
FACTOR, AND SOMETIMES THE PRIMARY FACTOR, TO BE
CONSIDERED IN EVALUATION OF DEBRIS PRODUCTION FROM A
NUCLEAR ATTACK. THE AREA INITIALLY SUBJECTED TO
FIRE WILL COMPARE TO THAT FOR BLAST DAMAGE FOR SMALL
WEAPONS, (MEGATON RANGE). FIRE SPREAD WOULD
SERVE TO FURTHER INCREASE THE AREA AFFECTED BY FIRE.
TO EVALUATE FIRE EFFECTS, ADDITIONAL INFORMATION
REGARDING IGNITION RANGE AND FIRE RESISTANCE OF
BUILDINGS IS NECESSARY. WITH THESE DATA AND
KNOWLEDGE OF THE BEHAVIOR OF THE TYPE OF BUILDING
INVOLVED, ITS FATE AFTER BEING SUBJECTED TO FIRE CAN
BE PREDICTED. USE OF ALTERED DEBRIS CURVES WILL
ENABLE PREDICTION OF THE AMOUNT OF DEBRIS THAT WILL
BE PRODUCED BY THE COMBINED EFFECTS OF BLAST AND
FIRE. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BHL27

AD-615 624

INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA ECONOMIC AND
POLITICAL STUDIES DIV

PROTECTING INDUSTRIAL RESOURCES AGAINST NUCLEAR
ATTACK: INTERIM REPORT OF AN ECONOMIC ANALYSIS, (U)

FEB 65 65P PESKIN, HENRY M. I

REPT. NO. IDA HQ-65-3550 .S-187

CONTRACT: OGD 0563 134

TASK: 4113C

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: AVAILABLE COPY WILL NOT PERMIT FULLY
LEGIBLE REPRODUCTION. REPRODUCTION WILL BE MADE IF
REQUESTED BY USERS OF DDC. COPY IS AVAILABLE FOR PUBLIC
SALE.

DESCRIPTORS: (INDUSTRIES, NUCLEAR WARFARE), (NUCLEAR
WARFARE, INDUSTRIES), ECONOMICS, CIVIL DEFENSE SYSTEMS,
POPULATION, MATHEMATICAL MODELS, BUDGETS, PRODUCTION,

ANALYSIS (U)

IDENTIFIERS: GROSS NATIONAL PRODUCT (U)

THIS STUDY DESCRIBES A METHOD FOR ALLOCATING AN
ASSUMED BUDGET FOR THE PROTECTION OF INDUSTRIAL
RESOURCES FROM NUCLEAR ATTACK. THE OBJECTIVE OF
THE ALLOCATION IS TO HELP ENSURE THAT THE SURVIVING
POPULATION HAS THE RESOURCES IT NEEDS FOR ITS
SUPPORT. THE MODEL IS A LINEAR PROGRAM CONSISTING
OF PRODUCTION RELATIONS, FINAL-DEMAND RELATIONS, AND
CIVIL-DEFENSE PROTECTION RELATIONS. THE MODEL WAS
APPLIED IN A PILOT STUDY THAT REFLECTS THE
CHARACTERISTICS OF THE ASSUMED ATTACK (PROTECTED
POPULATION, HEAVY INDUSTRIAL DAMAGE), WHOSE
PRINCIPAL CONCLUSIONS ARE: (1) THE DESTRUCTION
TO INDUSTRIAL RESOURCES WOULD BE PROPORTIONATELY
GREATER THAN THE POPULATION LOSS; THIS WOULD RESULT
IN A VERY LOW PER CAPITA INCOME BY PRESENT US
STANDARDS. (2) BY CHANGING THE BASIC POST-ATTACK
DEMAND CONDITIONS FROM UNRESTRICTED GNP
MAXIMIZATION TO BASE-YEAR PROPORTIONS (1958), THE
POST-ATTACK GNP WAS REDUCED BY OVER 50 PERCENT!
WITH A MINIMAL REQUIREMENT VECTOR RESTRICTION, THE
GNP FELL BY OVER 50 PERCENT AGAIN. (3) SETTING
FINAL-DEMAND GOALS FOR SPECIFIC SECTORS OF POST-
ATTACK ECONOMY WOULD FURTHER REDUCE THE MAXIMUM
ACHIEVABLE GNP. (4) ONLY SLIGHTLY MORE THAN
HALF THE POSITED MINIMAL DEMANDS OF THE SURVIVING
POPULATION WERE MET WITH A MAXIMUM LABOR UTILIZATION.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-615 634

HRB-SINGER INC STATE COLLEGE PA

PRE-PROTOTYPE HAND-HELD FIRE DETECTORS.

(U)

DESCRIPTIVE NOTE: FINAL REPT. FOR 30 SEP 64-26 APR 65.

MAR 65 31P

BASTUSCHECK, C. I

REPT. NO. HRB-76711-F

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*CIVIL DEFENSE SYSTEMS, FIRE SAFETY), (*FIRE SAFETY, CIVIL DEFENSE SYSTEMS), (*FIRE ALARM SYSTEMS, INFRARED EQUIPMENT), FIRES, NUCLEAR WARFARE, NUCLEAR EXPLOSIONS, CIVIL DEFENSE PERSONNEL, CIVILIAN PERSONNEL, FIRE EXTINGUISHERS, BUILDINGS, URBAN AREAS, PERFORMANCE (ENGINEERING), DESIGN, SPRAYS, TESTS (U)

IT WAS DETERMINED THAT IN AN URBAN AREA EXPOSED TO A NUCLEAR BURST, THE SUPPRESSION OF THE LARGE NUMBER OF FIRES WHICH WILL OCCUR MUST NECESSARILY INCLUDE EFFORTS OF UNTRAINED PERSONNEL (SELF-HELP), AND TRAINED CIVILIAN BRIGADES IN ADDITION TO PUBLIC FIRE DEPARTMENTS. THE EFFECTIVENESS OF PERSONNEL AND THE AMOUNT OF WATER REQUIRED TO SUPPRESS FIRES ON THE LEVEL OF SELF-HELP AND BRIGADES WERE DETERMINED FROM EXPERIMENTS PERFORMED IN LABORATORY AND IN ACTUAL STRUCTURES. EXPERIMENTS CONSISTED OF SUPPRESSION OF FURNITURE FIRES DURING VARIOUS STAGES OF DEVELOPMENTS. IT WAS FOUND THAT UP TO ABOUT TWO MINUTES PRIOR TO THE FLASHOVER, FIRES CAN BE CONTROLLED BY THE USE OF HAND EXTINGUISHERS. CORRESPONDING TO THE SELFHELP EFFORT, THE EFFECTIVENESS OF THE SELF-HELP EFFORTS IS GIVEN AS A FUNCTION OF FIRE DURATION. IT WAS DETERMINED THAT BRIGADES CAN SUPPRESS SINGLE AND TWO ADJACENT ROOMS FLASHOVER FIRES WITH SINGLE BOOSTER LINE SPRAY STREAMS USING ABOUT 15 TO 48 GALLONS OF WATER, RESPECTIVELY. FIRE DEPARTMENT OPERATIONS WERE ANALYZED USING DATA GATHERED ON CERTAIN SELECTED ACTUAL BUILDING FIRES. IN GENERAL, RURAL AND SMALL URBAN FIRE DEPARTMENTS WERE FOUND TO BE USING CONSIDERABLY LESS WATER THAN LARGE URBAN AREA FIRE DEPARTMENTS. CRITERIA ARE GIVEN FOR THE NUMBER OF SELFHELP AND BRIGADE TEAMS REQUIRED TO SUPPRESS A GIVEN NUMBER OF FIRES INITIATED BY THE THERMAL PULSE. VARIOUS ASPECTS OF FIRE DEPARTMENT OPERATIONAL NEEDS ARE DISCUSSED. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-615 911

GAUTNEY AND JONES COMMUNICATIONS INC WASHINGTON, D C
RADIOLOGICAL DATA HANDLING SYSTEM FOR USE IN THE
LOCAL LEVEL EMERGENCY OPERATING CENTER. (U)

DESCRIPTIVE NOTE: FINAL REPT.,

MAR 65 120P LARSON, MELVIN E. JR.; BAKER,

MARVIN C. JR.;

REPT. NO. 64-12-65

TASK: 2111E

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•RADIATION MONITORS, CIVIL DEFENSE
SYSTEMS), (•CIVIL DEFENSE SYSTEMS, RADIATION
MONITORS), RADIATION MEASUREMENT SYSTEMS,
RADIOLOGICAL CONTAMINATION, RADIOLOGICAL DOSAGE,
RADIOACTIVE FALLOUT, RADIOACTIVITY, RADIATION
HAZARDS, DISPLAY SYSTEMS, CIVIL DEFENSE PERSONNEL,
NUCLEAR WARFARE, DATA TRANSMISSION SYSTEMS,
HANDLING, POPULATION, COSTS, AUTOMATIC, MAPS,
GRAPHICS, TABLES (U)

THE REPORT CONCERNS A RADIOLOGICAL DATA GATHERING
AND HANDLING SYSTEM DEVELOPED FOR USE IN LOCAL LEVEL
CIVIL DEFENSE EMERGENCY OPERATING CENTERS.
THE SYSTEM PROVIDES FOR RAPID DEVELOPMENT OF A
COMPREHENSIVE RADIATION LEVEL PICTURE THROUGHOUT THE
EOC AREA OF RESPONSIBILITY, WITH MINIMUM EXPOSURE
OF MONITORING PERSONNEL AND WITH MINIMUM DEMANDS ON
COMMUNICATIONS FACILITIES. A 'BACKBONE' SYSTEM OF
REMOTE AUTOMATIC MONITORING INSTRUMENTS IS DESCRIBED.
PROVISIONS FOR VISUAL DISPLAY OF RADIOLOGICAL
DEFENSE INTELLIGENCE, UTILIZING A REMOTE CONTROLLED,
ELECTRO-MECHANICAL DISPLAY BOARD, ARE INCLUDED.
RECOMMENDED PROCEDURES, FORMS, STAFF REQUIREMENTS,
AND A TEST EXERCISE OF THE SYSTEM ARE CONTAINED IN
THE REPORT. IN DESIGNING THE FORMS AND VISUAL
DISPLAY DEVICES SO THAT THEY MAY BE PREPARED LOCALLY,
AND IN MAKING MAXIMUM USE OF EXISTING FACILITIES AND
PERSONNEL, THE COST OF INSTITUTING SUCH A SYSTEM HAS
BEEN MINIMIZED. (AUTHOR) (U)

UNCLASSIFIED

ODC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-616 576

RAND CORP SANTA MONICA CALIF

LECTURE ON CIVIL DEFENSE.

(U)

MAR 60 11P

MITCHELL, HAROLD H. :

REPT. NO. P-1927

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PRESENTATION TO STAFF
COLLEGE OF THE NEW YORK STATE CIVIL DEFENSE
COMMISSION, FEBRUARY 9, 1960, AT WEST POINT, NEW
YORK. AVAILABLE COPY WILL NOT PERMIT FULLY LEGIBLE
REPRODUCTION. REPRODUCTION WILL BE MADE IF REQUESTED BY
USERS OF ODC. COPY IS AVAILABLE FOR PUBLIC SALE.

DESCRIPTORS: (CIVIL DEFENSE SYSTEMS, SURVIVAL),
UNITED STATES, USSR, DETERRENCE, NUCLEAR WARFARE,
NUCLEAR WARFARE CASUALTIES, FOREIGN POLICY,
MEDICINE

(U)

IDENTIFIERS: MORTALITY RATES

(U)

CIVIL DEFENSE IS DISCUSSED IN TERMS OF THE
FOLLOWING OBJECTIVES: (1) ALLEVIATING THE
CATASTROPHE OF A NUCLEAR ATTACK ON THE UNITED
STATES; (2) RECONSTRUCTING AND RECONSTITUTING
OUR NATION TO ITS PRE-ATTACK STATUS; (3) THE
CONDUCTING OF A PEACETIME FOREIGN POLICY AND THE
IMPLEMENTING OF A BROAD DETERRENCE STRATEGY.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-619 204

NATIONAL RESOURCE EVALUATION CENTER WASHINGTON D C
NREC'S EXPANDING CAPABILITIES TO SUPPORT RESOURCE
MANAGEMENT.

(U)

JUL 65 10P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•NUCLEAR WARFARE, RECOVERY),
(•MANAGEMENT PLANNING, CIVIL DEFENSE SYSTEMS),
(•CIVIL DEFENSE SYSTEMS, INDUSTRIAL PRODUCTION),
UNITED STATES, VULNERABILITY, SURVIVAL

(U)

A REVIEW WAS MADE OF THE PAST DEVELOPMENT OF
NATIONAL RESOURCE EVALUATION CENTER'S
CAPABILITIES WITH EMPHASIS UPON FOUR ANALYTICAL
SYSTEMS. NAMELY: (1) A DAMAGE ASSESSMENT
SYSTEM. (2) A HAZARD ANALYSIS SYSTEM. (3)
A SUPPLY-REQUIREMENT ANALYSIS SYSTEM PERTAINING TO
SURVIVAL ITEMS, AND (4) A PROTOTYPE POST-ATTACK
PROGRAM DEVELOPMENT SYSTEM. A PROGRAM WAS
DESCRIBED FOR FAMILIARIZING OEP AND OTHER PERSONNEL
WITH THIS PROTOTYPE POST-ATTACK PROGRAM DEVELOPMENT
SYSTEM (PARM). PLANS WERE REVIEWED FOR NEW INTER-
INDUSTRY MODELS, INCLUDING: (1) THE
RECOVERY MODEL NOW IN DEVELOPMENT BY NPA. (2)
A NATIONAL ECONOMIC STRENGTH MODEL
INITIATED IN NREC WITH NPA ASSISTANCE. (3)
A REGIONALIZED MODEL WHICH WILL BE STARTED NEXT
FISCAL YEAR, IF FUNDS ARE AVAILABLE. PLANS WERE
REVIEWED FOR DEVELOPMENT OF STATISTICAL PROJECTION
MODELS. A DESCRIPTION WAS GIVEN OF CERTAIN FACETS
OF THE NATIONAL RESOURCE EVALUATION PROGRAM
WHICH, IN AN EMERGENCY, WOULD SUPPORT FEDERAL FIELD
ACTIVITIES AND WHICH WOULD FACILITATE THE FLOW AND
ASSIMILATION OF REPORTS FROM THE FIELD. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-619 902

STANFORD RESEARCH INST MENLO PARK CALIF
FALLOUT MODELS AND RADIOLOGICAL COUNTERMEASURE
EVALUATIONS.

(U)

MAY 65 22P MILLER, CARL F. ;

CONTRACT: N220 62479 65702

PROJ: M05116

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIOACTIVE FALLOUT, MATHEMATICAL
MODELS), (*CIVIL DEFENSE SYSTEMS, COUNTERMEASURES),
RADIOLOGICAL DOSAGE, NUCLEAR EXPLOSIONS,
RADIOLOGICAL CONTAMINATION, MEASUREMENT, SOILS,
DECONTAMINATION

(U)

THE REPORT IS A BRIEF DESCRIPTION OF A FALLOUT
MODEL AND OTHER SUBMODELS THAT HAVE BEEN FORMULATED
TO ASSIST IN THE ASSESSMENT OF RADIOLOGICAL DEFENSE
PROBLEMS AND IN THE EVALUATION OF RADIOLOGICAL
COUNTERMEASURES. THE DESIGN OF THE MODEL SYSTEM
EMPHASIZES APPLICATION TO BOTH SHORT-TERM AND LONG-
TERM RADIOLOGICAL PROBLEMS OF INTEREST TO CIVIL
DEFENSE. THE TYPES OF INPUT DATA THAT ARE
UTILIZED, THE VARIOUS IMPORTANT INDEPENDENT
PARAMETERS THAT ARE CONSIDERED IN THE MODELS AND
SUBMODELS, AND THE TYPES OF OUTPUT INFORMATION ARE
LISTED. ALSO, THE MAJOR ASSUMPTIONS, CONSTRAINTS,
AND CONCEPTS INVOLVED IN THE MATHEMATICAL
CONSTRUCTION OF EACH MODEL ARE SUMMARIZED. THE
PURPOSE OF THE REPORT IS TO PROVIDE RESEARCHERS ON
OTHER CIVIL DEFENSE INVESTIGATIONS GENERAL BACKGROUND
INFORMATION ON THE COMPOSITION AND OUTPUTS OF THESE
MODELS. THE REPORT DOES NOT INCLUDE ANY OF THE
MATHEMATICAL FORMULATIONS OF THE MODELS. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-622 096

HUDSON INST INC HARMON-ON-HUDSON N Y

A NEW LOOK AT THE DESIGN OF LOW-BUDGET CIVIL DEFENSE SYSTEMS.

(U)

DESCRIPTIVE NOTE: RESEARCH REPT..

AUG 65

42P

BROWN, WILLIAM M. ;

REPT. NO. H1-478-RK

TASK: 4211B

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (CIVIL DEFENSE SYSTEMS, URBAN AREAS), DESIGN, VULNERABILITY, SHELTERS, NUCLEAR WARFARE, NUCLEAR WARFARE CASUALTIES, WARNING SYSTEMS, RADIOACTIVE FALLOUT, POPULATION, SURVIVAL, DETERRENCE, COUNTERMEASURES, BUDGETS, COSTS, EFFECTIVENESS

(U)

THE FEASIBILITY OF DESIGNING HIGHLY EFFECTIVE LOW-COST CIVIL DEFENSE SYSTEMS IS EXAMINED IN RELATIONSHIP TO VARIOUS WAR OUTBREAK SCENARIOS AND THE UTILITY OF THE ASSOCIATED PREATTACK WARNING PERIOD. IT IS ARGUED THAT WITH MODERATE CONFIDENCE SUCH HIGHLY EFFECTIVE SYSTEMS CAN BE DESIGNED. THEY WOULD DEPEND UPON A GENERAL MOBILIZATION OF CIVILIAN RESOURCES DURING AN EMERGENCY TO GREATLY EXPAND AND IMPROVE ANY EXISTING C. D. CAPABILITY. IDEALLY SUCH DESIGNS CAN VISUALIZE ATTAINING THE GOAL OF ZERO CASUALTIES; HOWEVER, A DYNAMIC PLAN WOULD CONTAIN SEVERAL OPTIONS TO HANDLE THE MANY IMPERFECTIONS WHICH WOULD ALMOST CERTAINLY APPEAR DURING IMPLEMENTATION. THE ESSENTIAL ELEMENTS OF THE C. D. DESIGNS ARE EXAMINED SEPARATELY FOR TECHNICAL, POLITICAL, ADMINISTRATIVE, AND STRATEGIC FEASIBILITY. IT IS CONCLUDED THAT THIS APPROACH OFFERS SUBSTANTIAL PROMISE FOR FUTURE C. D. DEVELOPMENTS. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-623 304

HRB-SINGER INC STATE COLLEGE PA
HIGHER EDUCATION AND THE POST-ATTACK PERIOD. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
AUG 65 111P KING, ROBERT B. ,JR.;
KLEINER, ANNA M. ; HAMBACHER, WILLIAM O. ;
REPT. NO. HRB-79511-F

UNCLASSIFIED REPORT

DESCRIPTORS: (•EDUCATION, NUCLEAR WARFARE),
(•NUCLEAR WARFARE, EDUCATION), CIVIL DEFENSE
SYSTEMS, UNIVERSITIES, URBAN AREAS, NUCLEAR
EXPLOSION DAMAGE, NUCLEAR WARFARE CASUALTIES,
SURVIVAL, VULNERABILITY, STUDENTS, INSTRUCTORS,
PROFESSIONAL PERSONNEL, SOCIOLOGY, UNITED
STATES, TABLES, GRAPHICS (U)

THE REPORT PRESENTS AN INVESTIGATION INTO THE
POSTNUCLEAR ATTACK CAPABILITIES OF THE INSTITUTION OF
HIGHER EDUCATION. IT PROVIDES A METHODOLOGY FOR
INSTITUTIONAL ANALYSIS EMPLOYABLE IN THE STUDY OF A
WIDE RANGE OF SOCIAL INSTITUTIONS. THE EXISTING
HIGHER EDUCATION SYSTEM WAS ASSESSED FROM THE
STANDPOINT OF PHYSICAL AND ORGANIZATIONAL
VULNERABILITIES, AND THE NATURE OF SYSTEM DISRUPTION
LIKELY TO OCCUR AS A RESULT OF THE VULNERABILITIES
WAS DISCLOSED. OPERATIONAL ELASTICITY WAS EXAMINED
AND FOUND TO BE AN IMPORTANT FACTOR IN THE ASSESSMENT
OF POTENTIAL POST-ATTACK CAPABILITY. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-625 172 15/3 13/2
PLANNING RESEARCH CORP LOS ANGELES CALIF
THE ECONOMIC FEASIBILITY OF DECENTRALIZED
METROPOLITAN REGIONS. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
OCT 65 296P WOLTMAN, H. R. ; WOODFILL,
BARBARA ; BLUNT, KEITH ; DEIROSSI, JAMES ;
REPT. NO. PRC-D-796
CONTRACT: OCD-OS-62-278

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-426 925.

DESCRIPTORS: (CIVIL DEFENSE SYSTEMS, URBAN AREAS),
(URBAN PLANNING, ECONOMICS), FEASIBILITY STUDIES,
COSTS, POPULATION, DISTRIBUTION, DENSITY,
HOUSING PROJECTS, TRANSPORTATION, PASSIVE
DEFENSE (U)

THE PRECEDING PHASE OF THIS STUDY EXAMINED THE ROLE OF URBAN FORM AS A PASSIVE DEFENSE VARIABLE AND ESTABLISHED CRITERIA OF SPATIAL ARRANGEMENT AND DENSITY, WHICH WERE DESIGNED TO REDUCE METROPOLITAN VULNERABILITY TO NUCLEAR WEAPONS. THE RESULTING CONFIGURATION CONSISTS OF COMPACT, DISCRETE COMMUNITY UNITS HAVING POPULATIONS OF 100,000, SEPARATED FROM ONE ANOTHER BY 4 TO 7 MILES OF OPEN SPACE, AND GROUPED AROUND A CENTRAL OR CORE UNIT. SERVICES AND FACILITIES THAT ARE OBTAINABLE IN A METROPOLITAN AREA OF SEVERAL MILLION ARE MADE AVAILABLE IN THIS CONFIGURATION BY HIGH INTERCOMMUNITY MOBILITY. THE STUDY CONFIGURATION IS TAKEN TO BE THIS 'ORDERED SPRAWL' URBAN PATTERN. THE ECONOMIC FEASIBILITY OF THIS FORM OF REGIONAL CITY IS ASSESSED. THE FOCUS IS NECESSARILY ON COSTS, WHICH ARE TO SOME DEGREE MEASURABLE, AND ALTHOUGH COST DATA DIRECTLY PERTINENT TO THE IDEALIZATION DO NOT EXIST, IT IS POSSIBLE TO PROCEED INFERENTIALLY BY ANALYZING INFORMATION DERIVED FROM EXISTING METROPOLITAN AREAS. THE PRIMARY APPROACH IS THE SPECIFICATION OF A 'REFERENCE REGION' THAT INCORPORATES STRUCTURAL AND LINKAGE CHARACTERISTICS REPRESENTATIVE OF EXISTING URBAN AREAS, AND THE DIVISION OF THIS REGION INTO COMPONENTS THAT APPROXIMATE COMMUNITY UNITS OF THE STUDY CONFIGURATION. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-625 802 1973
STANFORD RESEARCH INST MENLO PARK CALIF
SUPPLEMENTAL ANALYSIS. CIVIL DEFENSE RESCUE. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
AUG 65 74P CHAIN, JOHN L. ; MEISTER,
ROBERT K. ; THOMAS, LACY G. ; SPURLOCK, EUGENE
M. ;
PROJ: SRI-4727
TASK: 2511B

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•CIVIL DEFENSE SYSTEMS, RESCUES),
(•RESCUES, -CIVIL DEFENSE SYSTEMS), (•NUCLEAR
WARFAKE, CIVIL DEFENSE SYSTEMS), DEBRIS,
CASUALTIES, FIRES, DAMAGE ASSESSMENT,
VULNERABILITY, CIVIL DEFENSE PERSONNEL,
MONITORS, ACOUSTICS, ACOUSTIC DETECTORS (U)

PERSONNEL CASUALTY AND TRAPPING FUNCTIONS: SIX
PERSONNEL CASUALTY FUNCTIONS ARE ENUMERATED TO
DESCRIBE THE PERCENTAGE BREAKDOWN OF THE POPULATION
FOLLOWING A NUCLEAR ATTACK. THESE FUNCTIONS
SPECIFY, BY DISTANCE FROM GROUND ZERO, THE PERCENTAGE
OF THOSE (1) KILLED IMMEDIATELY, (2) TRAPPED,
(3) NONAMBULATORY SERIOUSLY INJURED, (4)
AMBULATORY SERIOUSLY INJURED, (5) LIGHTLY
INJURED, AND (6) UNINJURED. RELATIONSHIP
BETWEEN FIRE AND RESCUE: THE OUTER RADIUS OF
INITIAL IGNITIONS FROM THERMAL ENERGY IS HIGHLY
SENSITIVE TO VISIBILITY. OUTER IGNITION RADIi ALSO
VARY GREATLY BETWEEN SURFACE AND AIR BURSTS. IN
THE FORMER CASE, THE ANGLE FROM THE FIREBALL TO THE
OUTSIDE RADIUS OF IGNITIONS IS 2 TO 3 DEGREES.
TOPS OF HOUSES ARE THE ONLY RESIDENTIAL MATERIAL
ASSUMED VISIBLE AND SUBJECT TO IGNITION BY THERMAL
ENERGY. WITH AIR BURSTS, INTERIOR KINDLING FUELS
ARE ASSUMED TO BE EXPOSED TO DIRECT THERMAL ENERGY
THROUGH WINDOWS, AND THUS TO BE THE PRINCIPAL CAUSES
OF STRUCTURAL IGNITION. POSTATTACK RESCUE SYSTEM
CRITERIA: FOR PRELIMINARY PLANNING PURPOSES, A
NATIONAL RESCUE FORCE OF APPROXIMATELY ONE MILLION
MEN IS SUGGESTED. IF THIS FORCE WERE TO BE
RESPONSIBLE FOR INITIAL MEDICAL TREATMENT, MASS-
CASUALTY SORTING, AND REMOVAL OF NONAMBULATORY
INJURED, IT WOULD HAVE TO BE SEVERAL TIMES LARGER.
LOCATION OF TRAPPED SURVIVORS BY ACOUSTICAL
METHODS: LITTLE RESEARCH HAS BEEN PERFORMED IN
APPLYING SENSORS THAT WILL DETECT FAINT VIBRATIONS
TRANSMITTED BY SOLID MATERIALS IN CONTACT WITH BURIED (U)

UNCLASSIFIED

DUC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-626 074 15/3
RAND CORP SANTA MONICA CALIF
UNITED STATE CIVIL DEFENSE, (U)
DEC 65 13P TOLSTIKOV, O. ;
REPT. NO. LT-65-106
MONITOR: TT , 66-60193

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF MONO. YADERNYE VEK I
VOINA (THE NUCLEAR AGE AND WAR), MOSCOW, 1964
P123-32.

DESCRIPTORS: (CIVIL DEFENSE SYSTEMS, UNITED
STATES), NUCLEAR WARFARE, NUCLEAR WARFARE
CASUALTIES, RADIOLOGICAL CONTAMINATION, FALLOUT
SHELTERS, CIVIL DEFENSE PERSONNEL, ATTITUDES,
PUBLIC OPINION, USSR (U)

TRANSLATION OF RUSSIAN REPORT: UNITED STATE CIVIL
DEFENSE.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-626 605 15/3 5/3
RAND CORP SANTA MONICA CALIF
ECONOMIC RECOVERY, (U)
AUG 65 22P HIRSHLEIFER, JACK ;
REPT. NO. P-3160

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•NUCLEAR WARFARE, RECOVERY),
(•ECONOMICS, NUCLEAR WARFARE), SURVIVAL,
DISASTERS, CIVIL DEFENSE SYSTEMS (U)

CONTENTS: POSSIBILITY OF ECONOMIC SURVIVAL AND
RECOVERY; RESOURCE AVAILABILITY VERSUS NEEDS; POLICY,
CONTROLS, AND INCENTIVES; IMPLICATION FOR PRE-ATTACK
PREPARATION, (TO CONSTITUTE A CHAPTER OF A BOOK ON
CIVIL DEFENSE BEING EDITED BY PROF. EUGENE
WIGNER.) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-629 159 15/3 2/2 15/6 6/18
STANFORD RESEARCH INST MENLO PARK CALIF
POSTATTACK FARM PROBLEMS. PART II. ATTACK EFFECTS
ON INPUTS AND FARM OUTPUT, (U)
OCT 61 1969 WILLIAMSON, OLIVER E. ; MULL,
KENDALL D. I
CONTRACT: CDM-SR-59-19, CDM-SR-60-37
PROJ: SKI-IMU-3064.

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIOLOGICAL WARFARE, AGRICULTURE),
(*AGRICULTURE, RADIOLOGICAL CONTAMINATION), (*CIVIL
DEFENSE SYSTEMS, AGRICULTURE), NUCLEAR WARFARE,
MANAGEMENT PLANNING, SURVIVAL, RADIOACTIVE
FALLOUT, FALLOUT SHELTERS, FOOD, PRODUCTION,
HUMANS, ANIMALS, VULNERABILITY, MANPOWER
STUDIES, GASOLINE, FERTILIZERS, ELECTRICITY,
INSECTICIDES, PESTICIDES, IRRIGATION SYSTEMS,
SEEDS (U)

FARM FOOD PRODUCTION IN THE FIRST YEAR AFTER A
NUCLEAR ATTACK MIGHT BE LESS THAN DEMANDS OF THE
SURVIVING POPULATION UNLESS SEVERAL MAJOR ADAPTATIONS
ARE MADE. WITH MOBILIZATION MEASURES SUCH AS
CONVERSION OF CROPLANDS FROM NON-FOOD AND LIVESTOCK
FEED PRODUCTION TO HUMAN FOOD PRODUCTION AND USE OF
SURPLUS COMMODITY STOCKS FOR LIVESTOCK FEED, ADEQUATE
PRODUCTION COULD PROBABLY BE MAINTAINED. FOOD
PRODUCTION WOULD INCREASE IN SUBSEQUENT YEARS UNLESS
NATIONAL RECOVERY WERE PREVENTED BY CONTINUED
UNSETTLED CONDITIONS. CONTAMINATION OF CROPLAND
AND LOSSES OF LIVESTOCK WOULD PROBABLY BE THE MOST
SERIOUS CONSTRAINTS TO AGRICULTURAL PRODUCTION FOR
THE FIRST POSTATTACK YEAR. HOWEVER, IF FALLOUT
EFFECTS ON CROPLAND AND LIVESTOCK WERE LESS SERIOUS
THAN CURRENTLY ESTIMATED, CASUALTIES AMONG FARMERS
COULD BE THE CHIEF CONSTRAINT. IN ANY EVENT,
PRODUCTION WOULD PROBABLY BE LIMITED PRIMARILY BY ONE
OF THESE CONSTRAINTS, RATHER THAN BY THE CUMULATIVE
EFFECTS OF LESS CRITICAL INPUTS. ESTIMATES OF
PRODUCTION FOR A RANGE OF ASSUMPTIONS ABOUT HUMAN,
ANIMAL, AND CROP VULNERABILITIES TO ATTACK ARE GIVEN.
(AUTHOR) (U)

UNCLASSIFIED

/BML27

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-629 764 15/2 15/3
STANFORD RESEARCH INST MENLO PARK CALIF
RADIOLOGICAL TARGET ANALYSIS PROCEDURES, (U)
MAR 66 100P LEE, HONG I
CONTRACT: N228-(62479)65421;
PROJ: MU-5069.

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIOLOGICAL WARFARE, CIVIL DEFENSE
SYSTEMS), (*CIVIL DEFENSE SYSTEMS, RADIOLOGICAL
WARFARE), RADIOACTIVE FALLOUT, FALLOUT SHELTERS,
HEALTH PHYSICS, DECONTAMINATION (U)

THE RADIOLOGICAL TARGET ANALYSES IN THIS REPORT
CONSIST OF A SERIES OF ANALYTICAL PROCEDURES FOR
EVALUATING THE RESIDUAL NUMBERS FOR SHELTERS AND
OTHER LOCATIONS BEFORE, DURING, AND AFTER
DECONTAMINATION SO THAT EXPOSURE DOSE MAY BE
CALCULATED. THESE RESIDUAL NUMBERS ARE USED TO
PROVIDE ESTIMATES OF (1) SHELTER STAY TIMES,
(2) MANPOWER REQUIREMENTS FOR PROPOSED
DECONTAMINATION, (3) EXPOSURE TO RECOVERY
PERSONNEL, (4) DECONTAMINATION EFFECTIVENESS
REQUIREMENTS, (5) EQUIPMENT AND SUPPLIES
REQUIREMENTS, AND (6) FEASIBILITY OF PLANS AND
SCHEDULES FOR THE RECOVERY OF VITAL FACILITIES AND
LIVING AREAS. TABLES, CHARTS, FIGURES, AND SAMPLE
CALCULATIONS PROVIDE WORKING TOOLS WHICH MAY BE USED
FOR CIVIL DEFENSE PLANNING AND TRAINING, AND SIMILAR
PRACTICAL LEVELS OF RADIOLOGICAL DEFENSE PREPARATION.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-630 281 15/3 15/2 15/6 6/18

DEPARTMENT OF THE NAVY WASHINGTON D C

RULES FOR THE BEHAVIOR OF THE POPULATION IN
CONTAMINATED AREAS.

(U)

66 37P MEDVEDEV, V. A. ;

REPT. NO. TRANSLATION-753.

MONITOR: TT , 66-60813

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF UNIDENTIFIED MONO., PUB. BY
DOSAAF PUBLISHING HOUSE, MOSCOW, 1958.

DESCRIPTORS: (*CIVIL DEFENSE SYSTEMS, INSTRUCTION
MANUALS), (*CONTAMINATION, CIVIL DEFENSE SYSTEMS),
(*RADIOLOGICAL WARFARE, CIVIL DEFENSE SYSTEMS),
(*CHEMICAL WARFARE, CIVIL DEFENSE SYSTEMS),
(*BIOLOGICAL WARFARE, CIVIL DEFENSE SYSTEMS),
BEHAVIOR, AERIAL WARFARE, RADIOLOGICAL
CONTAMINATION, BIOLOGICAL CONTAMINATION, CHEMICAL
CONTAMINATION, POPULATION, USSR, CHEMICAL WARFARE
AGENTS, BIOLOGICAL WARFARE AGENTS

(U)

CONTENTS: GENERAL INFORMATION; SPECIAL RULES
FOR THE BEHAVIOR OF THE POPULATION IN AN AREA
CONTAMINATED WITH RADIOACTIVE MATTER; SPECIAL
RULES FOR THE BEHAVIOR OF THE POPULATION IN AN AREA
CONTAMINATED WITH WAR GASES; SPECIFIC PROPERTIES OF
A BACTERIOLOGICAL CONTAMINATION.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-631 026 15/3 18/3 15/6
INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA ECONOMIC AND
POLITICAL STUDIES DIV
NUCLEAR BLAST EFFECTS ON A METROPOLITAN ECONOMY, (U)
SEP 65 117P TRUPPNER, WILLIAM C. ;
REPT. NO. STUDY-S-209, IDA/HQ-65-4208
CONTRACT: OCS-OS-63-134,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•URBAN AREAS, •NUCLEAR EXPLOSION
DAMAGE), (•CIVIL DEFENSE SYSTEMS, •BLAST), URBAN
AREAS, INDUSTRIES, ECONOMICS, LABOR, POPULATION,
NUCLEAR WARFARE CASUALTIES, TEXAS, INDUSTRIAL
PRODUCTION (U)
IDENTIFIERS: PROPERTY (U)

THE STUDY SUMMARIZES THE WORK DONE TO DEVELOP A
METHOD FOR MEASURING THE NUCLEAR BLAST EFFECTS ON THE
ECONOMIC RESOURCES OF A SINGLE CITY. THE METHOD
DEVELOPED WAS APPLIED TO DATA DESCRIBING THE
HOUSTON, TEXAS, STANDARD METROPOLITAN
STATISTICAL AREA. THE RESULTS WERE EXPRESSED
IN TERMS OF WEAPON EFFECTS ON ECONOMIC OUTPUT,
PROPERTY VALUES, AND POPULATION CHARACTERISTICS
INCLUDING THE EXPERIENCED LABOR FORCE. THE STUDY
INDICATES THE METHODS USED TO OBTAIN THE INPUT DATA
REQUIRED TO ANALYZE WEAPON EFFECTS ON THE ECONOMY OF
A LARGE METROPOLITAN AREA. THE STUDY ALSO INCLUDES
A DESCRIPTION OF THE PROBLEMS ENCOUNTERED IN
DEVELOPING THE DATA AND THE STEPS TAKEN TO OVERCOME
SUCH DIFFICULTIES. THESE DATA WERE DISTRIBUTED TO
SINGLE CELLS OF A 65 X 65 ONE-KILOMETER SQUARE MATRIX
WHICH WAS USED TO MEASURE OVERPRESSURE EFFECTS ON
ECONOMIC RESOURCES FOR EIGHT WEAPONS OF YIELDS
RANGING FROM 0.1 MEGATON TO 100 MEGATONS. WEAPON
EFFECTS ON ECONOMIC RESOURCES WERE RELATED TO EFFECTS
ON THE POPULATION OF HOUSTON FOR THE SAME SIMULATED
ATTACK CONDITIONS. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-632 211 15/3 5/1

URS CORP BURLINGAME CALIF
OPERATIONAL AND MANAGEMENT ASPECTS OF PERIPHERAL
RADIOLOGICAL COUNTERMEASURES. (U)

DESCRIPTIVE NOTE: FINAL REPT.,

MAR 66 155F VAN HORN, WILLIAM H. ;

REPT. NO. URS-646-4,

CONTRACT: N228(62479)65718,

MONITOR: USNRDL , TRC-5

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: DOCUMENT INCLUDES SUMMARY REPT.

DESCRIPTORS: (CIVIL DEFENSE SYSTEMS,
COUNTERMEASURES), (MANAGEMENT PLANNING, CIVIL
DEFENSE SYSTEMS), RADIOLOGICAL CONTAMINATION,
FALLOUT SHELTERS, SHIELDING, RADIOLOGICAL
DOSAGE, EVACUATION, SURVIVAL (U)

THE OPERATIONAL CONSTRAINTS AND MANAGEMENT PROBLEMS ASSOCIATED WITH THE PLANNING AND IMPLEMENTATION OF PERIPHERAL RADIOLOGICAL COUNTERMEASURES WERE INVESTIGATED. THE FOUR PERIPHERAL COUNTERMEASURES STUDIED (POSTATTACK EVACUATION, APPLIED SHIELDING, DOSE EQUALIZATION - INCLUDING GROUP SHIELDING - AND EXPOSURE SCHEDULING) CAN BE USEFUL TO THE LOCAL CIVIL DEFENSE ORGANIZATION IN PROVIDING A SIGNIFICANT DEGREE OF CONTROL OVER RADIATION EXPOSURE IN THE EARLY POSTATTACK PERIOD, AND THEIR USE MAY RESULT IN A REDUCTION OF DOSE TO PERSONNEL AND/OR A DECREASE IN THE TIME TILL EMERGENCE FROM SHELTER IS POSSIBLE. MOREOVER, THE FLEXIBILITY IN SCHEDULING MADE POSSIBLE BY THE USE OF PERIPHERAL COUNTERMEASURES CAN INCREASE THE SCOPE OF LIFESAVING ACTIVITIES AND PERMIT EARLIER INITIATION OF THE RECOVERY PHASE. THE MAJOR MANAGEMENT CONSTRAINT ON THE USE OF PERIPHERAL COUNTERMEASURES CONCERNS THE RAPIDITY WITH WHICH DECISIONS CAN BE REACHED SO THAT ACTION CAN BE INITIATED. IT WAS CONCLUDED THAT THE DEGREE OF PREATTACK PLANNING DEEMED NECESSARY FOR PERIPHERAL COUNTERMEASURES CAN BE INTEGRATED INTO THE PRESENT CIVIL DEFENSE ORGANIZATION WITH RELATIVELY MINOR DIFFICULTY, RESULTING IN AN APPRECIABLE PAYOFF IN POSTATTACK CAPABILITIES. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-632 5YS 6/21 15/4 15/6
DEPARTMENT OF HEALTH EDUCATION AND WELFARE WASHINGTON D
C
REVIEW OF COMBINED TRAUMA: RESEARCH, CLINICAL
MANAGEMENT AND PLANNING. (U)
JAN 66 174P WILLIAMS, DEAN W. ; DUGGAR,
BENJAMIN C. ; BURGER, EDWARD J. ; CHAMBERLIN,
HARRY S. ;
CONTRACT: OCD-OS-63-141, PH-86-64-134

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•NUCLEAR WARFARE CASUALTIES, •RADIATION
INJURIES), CIVIL DEFENSE SYSTEMS, NUCLEAR WEAPONS,
BURNS, RADIATION SICKNESS, RADIOACTIVE FALLOUT,
BLAST, WOUNDS + INJURIES, INFECTIONS,
ANTIBIOTICS, IMMUNITY, MEDICINE, THERAPY,
SHOCK(PATHOLOGY), ARTIFICIAL RESPIRATION,
ELECTROLYTES(PHYSIOLOGY), RADIOLOGICAL DOSAGE,
DISASTERS, SURVIVAL, MEDICAL PERSONNEL,
MANAGEMENT PLANNING, BIBLIOGRAPHIES (U)

THE REVIEW COVERS THE TOPIC OF COMBINED TRAUMA--
RADIATION INJURY PLUS BURNS, PHYSICAL INJURY, AND/OR
INFECTION. SINCE THIS CLASS OF CASUALTY IS ALMOST
EXCLUSIVELY THE PRODUCT OF NUCLEAR WEAPONS EFFECTS,
THE EMPHASIS OF THE REVIEW IS ON PRINCIPLES OF
CLINICAL MANAGEMENT. MAJOR SECTIONS OF THE REVIEW
ARE: (1) A CASUALTY MODEL, GENERATED TO ASSESS
THE SIGNIFICANCE OF COMBINED TRAUMA RELATIVE TO OTHER
FORMS OF INJURY. (2) A REVIEW OF CLINICAL
MANAGEMENT PRINCIPLES FOR CARE OF COMBINED TRAUMA
PATIENTS. (3) CLINICAL GUIDES TO THE CARE OF
RADIATION, BURN, AND INFECTION CASUALTIES. (4) A
REVIEW OF THE RECENT COMBINED TRAUMA RESEARCH, AND
(5) A SUMMARY OF PLANNING MEASURES DESIGNED TO
ASSIST IN PREPAREDNESS FOR DISASTER MEDICAL CARE.
AN EXTENSIVE BIBLIOGRAPHY IS ALSO INCLUDED.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-632 665 6/5 15/3 13/2 15/1
RESEARCH TRIANGLE INST DURHAM, N C OPERATIONS RESEARCH AND
ECONOMICS DIV
ENVIRONMENTAL HEALTH PLANNING FOR POSTATTACK
CONDITIONS: SOME PROBLEMS, PROGRAMS, AND
PRIORITIES. (U)

DESCRIPTIVE NOTE: FINAL REPT.,
APR 66 BUP SALMON, RAPHAEL J. ;

REPT. NO. R-00-147,

CONTRACT: PH-66-65-16

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*MANAGEMENT PLANNING, *PUBLIC HEALTH),
(*PUBLIC HEALTH, NUCLEAR WARFARE), CIVIL DEFENSE
SYSTEMS, OPERATIONS RESEARCH, DISEASES, DISEASE
VECTORS, SURVIVAL, FOOD, HOUSING, WATER
SUPPLIES, WASTES(SANITARY ENGINEERING), NUCLEAR
WARFARE CASUALTIES (U)
IDENTIFIERS: POSTATTACK OPERATIONS (U)

CONDITIONS IMPOSED BY MASSIVE NUCLEAR ATTACK CAN BE
EXPECTED TO DISRUPT NORMAL ENVIRONMENTAL HEALTH
SERVICES OF COMMUNITIES THROUGHOUT THE UNITED
STATES, AND TO THREATEN THE HEALTH OF SURVIVING
POPULATION. THIS STUDY DEVELOPS A FRAMEWORK TO
HELP DECISION-MAKERS EVALUATE POSTATTACK CONDITIONS
RELATIVE TO ENVIRONMENTAL HEALTH. REVIEW AND
ANALYSIS OF EXISTING INFORMATION ON PROBABLE
POSTATTACK CONDITIONS AS THEY MIGHT AFFECT, AND BE
AFFECTED BY, PERSONNEL OF LOCAL HEALTH DEPARTMENTS,
PUBLIC HEALTH ORGANIZATION, AND RESOURCE MANAGEMENT
PRACTICES IS PRESENTED. ANTICIPATED POSTATTACK
ENVIRONMENTAL HEALTH PROBLEMS ARE IDENTIFIED, AND
PRIORITY JUDGMENTS ARE MADE ON A COMPARATIVE BASIS IN
TERMS OF LEVEL OF GRAVITY. NATIONAL SUPPORTING
THE JUDGMENTS IS INCLUDED, AND BOTH ACTION AND
RESEARCH PROGRAMS TO IMPROVE PREPAREDNESS ARE
RECOMMENDED. IMPORTANT SOURCES OF DATA PRESCRIBED
FOR THIS STUDY WERE THE REPORTS AND WORKING PAPERS OF
AN EARLIER U. S. PUBLIC HEALTH SERVICE
PROJECT, "ENVIRONMENTAL HEALTH PROBLEMS IN
THE POST SHELTER PERIOD". IN ADDITION, FOUR
CITY HEALTH DEPARTMENTS WERE VISITED TO ASSIST IN
ANALYSIS OF NORMAL ENVIRONMENTAL HEALTH CONDITIONS
RELATIVE TO THOSE EXPECTED IN A POSTATTACK RECOVERY
PERIOD AND OF THE ABILITY OF A LOCAL HEALTH AGENCY TO
COPE WITH PROJECTED CONDITIONS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-635 187 15/6 15/3
URS CORP BURLINGAME CALIF
FORMATION OF DEBRIS FROM BUILDINGS AND THEIR CONTENTS
BY BLAST AND FIRE EFFECTS OF NUCLEAR WEAPONS. (U)
DESCRIPTIVE NOTE: FINAL REPT.
APR 66 138P ROTZ, J. ; EDMUNDS, J. ; KAPLAN,
K. ;
REPT. NO. 5D-1101-3312B-1, URS-651-4

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: ORIGINAL CONTAINS COLOR. REPRODUCED
IN BLACK/WHITE ONLY AFTER STOCK IS EXHAUSTED.

DESCRIPTORS: (•NUCLEAR EXPLOSIONS, •DEBRIS),
NUCLEAR WEAPONS, FIRES, BUILDINGS, AIRBURST,
BLAST, STRUCTURES, VULNERABILITY, RECOVERY,
RECLAMATION, URBAN AREAS, DAMAGE,
MODELS(SIMULATIONS), CIVIL DEFENSE SYSTEMS,
GRAPHICS, TABLES, MICHIGAN (U)
IDENTIFIERS: POSTATTACK (U)

THE PRIME OBJECTIVE OF THIS PHASE OF WORK IS TO
AUGMENT THE DEBRIS PREDICTION MODEL WITH ADDITIONAL
INFORMATION (DEBRIS CHARTS, FAILURE OVERPRESSURES,
CONTENTS-DEBRIS CRITERIA, ESTIMATING PROCEDURES AND
DATA, ETC.) TO FACILITATE ITS APPLICATION AND
INCREASE ITS RANGE OF APPLICABILITY. TO THIS END,
NEW DEBRIS CHARTS ARE PRESENTED WHICH COVER A MORE
COMPLETE AND DETAILED RANGE OF BUILDING TYPES, ALONG
WITH A TABULATION OF FAILURE OVERPRESSURES FOR
MISCELLANEOUS SMALL STRUCTURES (TOWERS, POLES,
STACKS, ETC.). CRITERIA ARE DEVELOPED FOR
DETERMINATION OF DEBRIS FROM THE CONTENTS OF
BUILDINGS, AND FURNISHED WITH THESE (FOR EASE OF
USE) ARE DATA RELATING THE AMOUNT OF MATERIAL
CONTAINED IN BUILDINGS TO BUILDING OCCUPANCY. A
DESCRIPTION OF THE DEBRIS PREDICTION MODEL AND ITS
OPERATION AND A DETAILED WORKED EXAMPLE ARE PRESENTED
ILLUSTRATING THE USE OF THE MODEL TO DETERMINE DEBRIS
CONTOURS OVER AN ENTIRE CITY (DETROIT) AND DEBRIS
PROFILES ALONG A ROUTE THROUGH THE CITY. IN THIS
EXAMPLE, DEBRIS DEPTHS BEFORE AND AFTER FIRE AND THE
PERCENTAGE CONTRIBUTION BY BUILDING CONTENTS AND
STRUCTURAL COMPONENTS IN EACH CASE ARE GIVEN.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-635 820 6/18 12/2 15/3
RESEARCH TRIANGLE INST DURHAM N C
RADIOLOGICAL RECOVERY REQUIREMENTS, STRUCTURES, AND
OPERATIONS RESEARCH: INTRODUCTION AND SUMMARY. (U)
DESCRIPTIVE NOTE: FINAL REPT., 19 FEB 65-6 JUN 66.
JUN 66 23P RYAN, JOSEPH T. ;
CONTRACT: N228(62479)-66153
PROJ: RTI-OU-214.

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIOLOGICAL CONTAMINATION,
DECONTAMINATION), (*DECONTAMINATION, *COST
EFFECTIVENESS), (*CIVIL DEFENSE SYSTEMS, OPERATIONS
RESEARCH), (*ANALOG COMPUTERS, FEASIBILITY STUDIES) (U)
IDENTIFIERS: POSTATTACK OPERATIONS (U)

THE PRIMARY OBJECTIVE OF THIS STUDY IS TO DETERMINE
COST AND EFFECTIVENESS INFORMATION RELATING TO THE
APPLICATION OF DECONTAMINATION AND THE EXTENT OF ITS
UTILITY WHEN APPLIED TO THE RECOVERY OF EXTENSIVE
CITY AREAS IN A POSTATTACK ENVIRONMENT. THE
GENERAL APPROACH TOWARD MEETING THE OBJECTIVES OF THE
STUDY, INCLUDING A BRIEF DESCRIPTION OF EACH OF THE
MODELS DEVELOPED UNDER THE CONTRACT, IS OUTLINED.
THE COMMAND AND CONTROL ASPECTS OF MUNICIPAL
DECONTAMINATION ARE SUMMARIZED, AND THE RESULTS OF A
SYSTEMS ANALYSIS OF DECONTAMINATION ARE BRIEFLY
STATED. THE RESULTS OF THE EXTENSIVE REAL-CITIES
ANALYSES CONDUCTED UNDER THE SUBTASK ARE SUMMARIZED.
BOTH GENERAL AND SPECIFIC CONCLUSIONS AND
RECOMMENDATIONS ARE STATED. THE RESULTS OF THE
REAL-CITIES ANALYSES SHOWED THAT ROOF DECONTAMINATION
IS AN IMPORTANT PART OF MOST COMBINED STRATEGIES OF
DECONTAMINATION. THESE RESULTS ALSO SHOWED THAT
THE RECOVERY OF SUBSTANTIAL CITY AREAS AND MULTI-
BUILDING COMPLEXES COULD BE ACCELERATED APPRECIABLY
BY PRACTICABLE DECONTAMINATION PROCEDURES.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-636 947 5/3 15/6 15/5
STANFORD RESEARCH INST MENLO PARK CALIF
INDUSTRIAL RECOVERY TECHNIQUES. (U)
APR 66 84P BROWN, STEPHEN L. ;
PROJ: SRI-MU-4949-350,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT INCLUDES DETACHABLE SUMMARY.

DESCRIPTORS: (*INDUSTRIES, *MOBILIZATION), (*CIVIL
DEFENSE SYSTEMS, *NUCLEAR WARFARE), INDUSTRIAL
PRODUCTION, VULNERABILITY, NUCLEAR EXPLOSION DAMAGE,
DAMAGE ASSESSMENT, RECLAMATION (U)

THIS REPORT PRESENTS SOME GENERALIZED CONCEPTS
CONCERNING INDUSTRIAL MODELS, INDUSTRIAL
VULNERABILITY TO NUCLEAR WEAPONS EFFECTS, INDUSTRIAL
RECOVERY REQUIREMENTS, AND INDUSTRIAL RECOVERY
PROCEDURES. MATHEMATICAL EXPRESSIONS RELATING
MANUFACTURING OUTPUTS TO INPUTS OF MATERIALS, OF
FACILITIES, AND OF PEOPLE ARE PRESENTED AND USED TO
DEVELOP MEASURES OF DAMAGE AND GUIDELINES FOR
ALLOCATING RECOVERY RESOURCES. MORE QUALITATIVE
DESCRIPTIONS OF INDUSTRIAL OPERATIONAL ORGANIZATION,
DAMAGE ASSESSMENT METHODS, METHODS FOR DETERMINING
RECOVERY REQUIREMENTS, AND SPECIFIC RECOVERY
PROCEDURES ARE ALSO FORMULATED. RECOMMENDATIONS
ARE SUBMITTED CONCERNING (1) OPERATIONAL
COUNTERMEASURES FOR INDUSTRY AND FOR CIVIL DEFENSE
ORGANIZATIONS AND (2) DESIRABLE FURTHER RESEARCH
EFFORTS IN INDUSTRIAL CIVIL DEFENSE. (AUTHOR) (U)

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-637 833 5/9 15/3
HUMAN SCIENCES RESEARCH INC MCLEAN VA
A STUDY OF PERSONNEL DEMANDS AND AVAILABILITIES FOR
POSTATTACK COUNTERMEASURE SYSTEMS. (U)
DESCRIPTIVE NOTE: FINAL REPT., FEB 65-JUN 66.
JUN 66 184P PENDLETON, WILLIAM H. ;
REPT. NO. HSR-RR-66/11-MH.

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (CIVIL DEFENSE PERSONNEL, *MANPOWER
STUDIES), CIVIL DEFENSE SYSTEMS, PERSONNEL
MANAGEMENT, COUNTERMEASURES, NUCLEAR WARFARE, JOB
ANALYSIS, MANAGEMENT PLANNING, POPULATION,
SOCIOLOGY, STATISTICAL DATA (U)
IDENTIFIERS: POSTATTACK OPERATIONS (U)

THE REPORT PRESENTS SOME OF THE ISSUES RELATED TO
THE USE AND ASSIGNMENT OF MANPOWER TO POSTATTACK
COUNTERMEASURE SYSTEMS. ASSUMING THAT COUNTER-
MEASURE SYSTEMS MUST BE ABLE TO UTILIZE ALL
POTENTIALLY AVAILABLE MANPOWER AND THAT DIFFERENT
SYSTEMS MUST AVOID COMPETING WITH EACH OTHER FOR THE
SMALL POOLS OF MANPOWER ORDINARILY AVAILABLE FOR
EMERGENCY ACTION, THE REPORT USES THE CONCEPT OF
ORGANIZATION TO EXAMINE THE QUALITY AND SIZE OF
POTENTIAL POOLS OF MANPOWER AND SUGGESTS THAT THE
SAME CONCEPT IS PARAMOUNT IN CONSIDERING THE MEANS OF
ASSIGNING MANPOWER TO COUNTERMEASURE SYSTEMS. ON
THE BASIS OF AN EXAMINATION OF FOURTEEN GENERAL
ORGANIZATIONAL GROUPINGS, IT IS CONCLUDED, FIRST,
THAT THE CAPACITY OF THE POPULATION TO GENERATE
POTENTIAL MANPOWER FOR EMERGENCIES IS ENORMOUS AND,
SECOND, THAT THE ABILITY TO ORGANIZE MANPOWER FOR
EMERGENCY OPERATIONS, THOUGH IN SOME RESPECTS GREAT,
IS NOT DISTRIBUTED THROUGH THE SOCIETY IN THE SAME
MAY AS IS THE POTENTIAL MANPOWER. FROM AN
EXAMINATION OF THIRTEEN AREAS OF NEED THAT WOULD
CHARACTERIZE THE POSTATTACK SOCIETY, THE REPORT
SUGGESTS SEVERAL PRINCIPLES FOR ASSIGNING MANPOWER.
THE REPORT CONCLUDES WITH A DESCRIPTION OF THE
KINDS OF RESEARCH THAT ARE SUGGESTED BY THE
INVESTIGATION. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-638 969 15/3
PITTSBURGH UNIV PA DEPT OF SOCIOLOGY
THE IMPACT OF CIVIL DEFENSE INFORMATION I: AN
EXAMINATION OF INFORMATION LEVELS. (U)
JUN 66 101P ROSENBERG, DOROTHY B. ;
CONTRACT: OCD-OS-63-48, NSF-G-11309

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•NATIONAL DEFENSE, CIVIL DEFENSE
SYSTEMS), (•CIVIL DEFENSE SYSTEMS, PUBLIC OPINION),
NUCLEAR WARFARE, COLD WAR, WARNING SYSTEMS, ARMS
CONTROL, DISARMAMENT, SHELTERS, NUCLEAR WEAPONS,
UNITED STATES, AGING (PHYSIOLOGY) (U)

THE PURPOSE IS TO STUDY THE IMPACT OF CIVIL
DEFENSE INFORMATION IN TERMS OF INFORMATION LEVELS
OF INFORMATION ABOUT CD, COLD WAR, EFFECT OF
NUCLEAR WEAPONS, AND ARMS CONTROL AND DISARMAMENT
EFFORTS. SUBJECTIVE LEVELS OF INFORMATION ON THESE
FOUR ISSUES, BASED ON A NATIONAL BLOCK SAMPLE'S SELF-
IMPUTED INFORMATION, ARE COMPARED WITH OBJECTIVE
LEVELS OF INFORMATION DETERMINED BY OTHER
RESEARCHERS, AND THESE TWO MEASURES OF INFORMATION
LEVELS ARE FOUND TO BE COMPATIBLE. WHILE THERE IS
NO WAY OF KNOWING WHETHER INFORMATION PEOPLE THINK
THEY HAVE IS ACCURATE, THOSE WHO TEND TO FEEL THEY
ARE INFORMED ABOUT CD ARE WOMEN AS WELL AS MEN,
NEGROES AS WELL AS NON-NEGROES, THOSE AT ALL BUT
THE LOWEST LEVEL OF EDUCATION, THOSE AT ALL LEVELS OF
INCOME. THE MOST IMPORTANT PERSONAL FACTORS ARE
RELATED TO RESPONDENT'S AGE. THOSE WHO HAVE HIGH
SUBJECTIVE CD INFORMATION DISPLAY A GREATER
OPTIMISM ABOUT THE FUTURE AND ARE LESS INCLINED TO
WANT WORLD WAR III OR A COMMUNIST SURRENDER
BECAUSE OF U. S. TECHNOLOGICAL SUPREMACY; THEY
FAVOR ALL SHELTER PROGRAMS AND TEND TO FEEL THAT THE
PRESENT WARNING SYSTEM IS VERY GOOD. THE FINDINGS
IMPLY THAT: (1) THERE IS LITTLE NEED TO TRY TO
CONVINCE THE AMERICAN PEOPLE THAT CD MEASURES ARE
DESIRABLE OR WARRANTED; (2) CD MESSAGES CAN
AFFORD COMPLETE FRANKNESS IN DEPICTING TO THE NATION
BOTH THE PROMISE AND THE LIMITATIONS OF PROTECTIVE
MEASURES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-639 367 15/3 5/3
HUDSON INST INC HARMON-ON-HUDSON N Y
CRISIS PREPARATIONS FOR POSTATTACK ECONOMIC
RECOVERY. (U)
DESCRIPTIVE NOTE: RESEARCH REPT.
JUL 66 55P RUCKETT, FREDERICK C. ; BROAN,
WILLIAM M. ;
REPT. NO. HI-661-HR.

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•CIVIL DEFENSE SYSTEMS, •ECONOMICS).
URBAN AREAS, UNITED STATES, TRANSPORTATION,
INDUSTRIAL PLANTS, UNDERGROUND STRUCTURES,
Factories, FOOD, RECOVERY (U)

THE REPORT CONCERNS A CIVIL DEFENSE POLICY FOR THE PROTECTION OF ECONOMIC ASSETS. IT DESCRIBES THE SIZE AND GENERAL CHARACTER OF THE ASSETS AT RISK IN STANDARD ATTACKS AGAINST CITIES AND IT DESCRIBES THE SIZE AND NATURE OF U.S. TRANSPORTATION RESOURCES. THE POINT IS MADE THAT IN A FEW DAYS U.S. TRANSPORTATION RESOURCES ARE SUFFICIENTLY LARGE TO PERMIT RELOCATION OF A SIZABLE FRACTION OF THE EQUIPMENT AND INVENTORY RISK, PERHAPS 50%. THE REMAINING EQUIPMENT AND ASSETS MIGHT BE PROTECTED BY SUCH MEASURES AS BURYING OR LOCATING THEM IN BASEMENTS. EVEN STRUCTURES COULD BE MADE SOMEWHAT SURVIVABLE. CRISIS ACTIONS IN THESE CATEGORIES MIGHT BE POSSIBLE IN A WEEK OR LESS OF INTENSE EFFORT BY A MOBILIZED POPULATION. SHORT-TERM ACTIONS TO PROTECT PROPERTY MIGHT ASSURE ECONOMIC RECOVERY FOLLOWING A HEAVY CITY-ATTACK. OTHER ACTIONS ARE POSSIBLE IN LONGER PERIODS. FOR EXAMPLE, RELOCATING AND RESUMING PRODUCTION AT SOME FACTORIES MAY BE POSSIBLE GIVEN WEEKS AND MONTHS. FOOD STORES SEEM TO BE OPEN TO CONSIDERABLE INCREASE. GIVEN A YEAR, IT MIGHT BE POSSIBLE TO RELOCATE SOME PLANTS TO UNDERGROUND SITES AND TO IMPLEMENT MANY OTHER POTENTIALLY IMPORTANT ACTIONS DESIGNED TO FACILITATE POSTATTACK RECOVERY. PEACETIME PREPARATIONS FOR CRISIS ACTIONS COULD INCREASE THE NUMBER OF OPTIONS AVAILABLE AND THE EFFICIENCY WITH WHICH THEY COULD BE IMPLEMENTED. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-639 594 13/12 1976
HRB-SINGER INC STATE COLLEGE PA
PRELIMINARY INFRARED FIRE MAPPING SYSTEMS
ANALYSIS. (U)
DESCRIPTIVE NOTE: FINAL REPT.
NOV 65 20UP MIKELONIS, EUGENE C. ; SHEARER,
RICHARD P. ; DUGUAY, GRETCHEN L. ;
REPT. NO. HRB-75U11-F

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•FIRES, MAPPING), (•NUCLEAR
EXPLOSIONS, FIRES), INFRARED DETECTORS, AIRBORNE,
MONITORS, SYSTEMS ENGINEERING, INFRARED SCANNING,
CIVIL DEFENSE SYSTEMS (U)

AN ANALYSIS IS PRESENTED OF THE FACTORS AFFECTING
OPERATIONAL USE OF A POST-ATTACK IR FIRE MAPPING
SYSTEM. ORGANIZATIONS THAT COULD SUPPORT SUCH AN
OPERATION WERE DETERMINED. BASED UPON THE
EMPLOYMENT OF A SPECIFIC NUMBER OF IR UNITS, THE
TIME TO MAP ALL AREAS OF INTEREST WAS CALCULATED. A
'THREAT INDIFFERENCE' APPROACH WAS EMPLOYED TO
DETERMINE THE AREAS OF INTEREST. A TRAINING PROGRAM
IS PRESENTED FOR BOTH SYSTEM OPERATORS AND TECHNICAL
PERSONNEL. MANY POTENTIAL PEACETIME APPLICATIONS
OF THE SYSTEM WERE DEFINED. A COST ANALYSIS OF THE
VARIOUS SYSTEM CONFIGURATIONS IS ALSO GIVEN.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-639 710 13/2 15/3
ENGINEERING-SCIENCE INC ARCADIA CALIF
A PROTOTYPE MANUAL ON CIVIL DEFENSE ASPECTS OF
WATERWORKS OPERATIONS, PHASE II. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
SEP 66 105P HARMON, JUDSON A. ;
MONITOR: USNRDL TRC-65

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•PIPES, NUCLEAR EXPLOSION DAMAGE),
(•WATER SUPPLIES, •CIVIL DEFENSE SYSTEMS),
INSTRUCTION MANUALS, BLAST, DECONTAMINATION,
VULNERABILITY, MANAGEMENT PLANNING, CIVIL DEFENSE
PERSONNEL, FALLOUT SHELTERS (U)

THE STUDY PRESENTS INFORMATION ON THE BLAST
VULNERABILITY OF COMMUNITY WATER DISTRIBUTION
PIPELINES, ALTERNATE OPERATING TECHNIQUES FOR
CONTROLLING THE USE OF WATER IN EARLY POSTATTACK
PERIODS, AND ON RADIOLOGICAL RECOVERY PROCEDURES AND
SHELTERS AVAILABLE TO WATERWORKS PERSONNEL. THE
RESULTS OF THE ANALYSIS OF THE VULNERABILITY OF
PIPELINES INDICATE THAT THE PRIMARY MODE OF FAILURE
WILL BE CRUSHING OF THE PIPE. THE FIVE PRINCIPAL
ALTERNATE OPERATING TECHNIQUES CONSIDERED ARE:
(1) ISOLATION OF PORTIONS OF THE DISTRIBUTION
SYSTEM; (2) RATIONING CONSUMER WATER USE; (3)
REDUCING HYDROSTATIC OPERATING PRESSURES; (4)
REROUTING WATER; AND (5) THE UTILIZATION OF
AUXILIARY SOURCES OF WATER. PLANNING IS STRESSED
FOR POSTATTACK RADIOLOGICAL RECOVERY PROCEDURES, SUCH
AS, WET DECONTAMINATION AND THE DETERMINATION OF THE
SAFE STAY TIMES FOR RECOVERY PERSONNEL. IT IS
ESSENTIAL TO PROVIDE SHELTER IN LOCATIONS AS CLOSE AS
POSSIBLE TO THE DESIGNATED TASKS THAT WATERWORKS
PERSONNEL MUST PERFORM IN EARLY POSTATTACK RECOVERY
SITUATIONS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-639 713 15/3 5/3
HUDSON INST INC HARMON-ON-HUDSON N Y
MODELS OF THE POSTATTACK ECONOMY. (U)
AUG 66 45P AYRES, ROBERT D. ;
REPT. NO. HI-648-NR.

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*CIVIL DEFENSE SYSTEMS, *ECONOMICS),
MANAGEMENT PLANNING, MATHEMATICAL MODELS,
INDUSTRIES (U)

SOME OF THE LIMITATIONS OF INPUT-OUTPUT MODELS AS
THEY ARE CURRENTLY USED ARE SUMMARIZED. THEY ARE
STATIC, I.E., A SET OF STEADY EQUILIBRIUM
INTERINDUSTRY FLOW PATTERNS IS ASSUMED. THE SECTORS
ARE ASSUMED TO BE HOMOGENEOUS, WHICH IMPLIES THAT
EVERY COMPONENT OF A SECTOR IS INDISTINGUISHABLE AND
INTERCHANGEABLE WITH EVERY OTHER COMPONENT.
INTERINDUSTRY COEFFICIENTS ARE USUALLY ASSUMED TO
BE RIGIDLY FIXED AND INDEPENDENT OF SUPPLY AND
DEMAND. ALL MODELS TO DATE ARE GEOGRAPHICALLY
AGGREGATIVE. THE OBJECTIVE FUNCTION (GNP)
MAXIMIZATION PROCEDURE IS USUALLY AMBIGUOUS;
EXOGENOUS POLICY CONSIDERATIONS ARE INEXTRICABLY
MIXED UP WITH ENDOGENOUS DEMAND CONSIDERATIONS. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-639 751 15/3

HUDSON INST INC HARMON-ON-HUDSON N Y
METHODOLOGY FOR POSTATTACK RESEARCH.

(U)

DESCRIPTIVE NOTE: RESEARCH REPT.,

AUG 66 46P AYRES, ROBERT U. ;

REPT. NO. HI-647-RR.

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (CIVIL DEFENSE SYSTEMS, SCIENTIFIC
RESEARCH), BEHAVIOR, SOCIOLOGY, RADIATION EFFECTS,
NUCLEAR EXPLOSION DAMAGE

(U)

THE REPORT DISCUSSES THE METHODOLOGY OF POSTATTACK
RESEARCH. A HIERARCHICAL APPROACH IS DESCRIBED, IN
WHICH THE OBJECTS OF ANALYSIS RANGE FROM SIMPLE
ORGANISMS AND ARTIFACTS TO COMPLEX HUMAN SOCIETIES
AND ECOSYSTEMS. THE NOTION OF 'RESPONSE' TO A
PERTURBATION WHICH IS APPROPRIATE FOR SIMPLE SYSTEMS
IS EXTENDED TO ENCOMPASS THE WIDER NOTION OF
'DISUTILITY' IN DESCRIBING THE EFFECTS OF A NUCLEAR
ATTACK ON THE ECONOMY OR THE SOCIETY OF THE NATION AS
A WHOLE. THE APPROPRIATE USES OF DEVICES SUCH AS
SCENARIOS, GAMES, CASE HISTORIES, METAPHORS AND
MODELS FOR VARIOUS PURPOSES IS DISCUSSED. THE
MAJOR POINT IS THAT NON-RIGOROUS CONSTRUCTS MAY BE
EXTREMELY HELPFUL IN TRAINING, RAISING THE LEVEL OF
THE DISCUSSION, AND GENERATING INSIGHTS, BUT CANNOT
BE USED FOR PREDICTIVE PURPOSES AS MODELS CAN. A
'STATE-OF-THE-ART' ESTIMATE OF VARIOUS MODELS IS
INCLUDED. (AUTHOR;

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-643 204 6/5 13/2
RESEARCH TRIANGLE INST DURHAM N C OPERATIONS RESEARCH AND
ECONOMICS DIV
STUDY TO DETERMINE REQUIREMENTS FOR PUBLIC HEALTH
FACILITIES IN A POST-THERMONUCLEAR ATTACK
ENVIRONMENT. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
NOV 66 89P HALLAN, JEROME B. ;
REPT. NO. RTI-R-OU-264
CONTRACT: PH-109-66-50

UNCLASSIFIED REPORT

DESCRIPTORS: (•PUBLIC HEALTH, CIVIL DEFENSE
SYSTEMS), (•CIVIL DEFENSE SYSTEMS, NUCLEAR
WARFARE), STANDARDS, SEWAGE, DISPOSAL,
PROCESSING, WATER, SOLIDS, GARBAGE (U)

THE STUDY DETERMINED REQUIREMENTS FOR ADEQUATE
PUBLIC HEALTH FACILITIES AND OPERATIONS (WATER,
SEWAGE AND SOLID WASTE) IN A POST-THERMONUCLEAR
ATTACK ENVIRONMENT. FOUR CITIES WERE SURVEYED TO
EVALUATE SOLID WASTE DISPOSAL TECHNIQUES AND TO
DETERMINE SIMPLE TYPES OF EQUIPMENT AVAILABLE FOR
EMERGENCY TREATMENT OF WATER AND SEWAGE. A
QUESTIONNAIRE WAS SUBSEQUENTLY DEVELOPED TO ASCERTAIN
THE KNOWLEDGE LEVEL AND PREPAREDNESS OF SOLID WASTE
TREATMENT PERSONNEL TO COPE WITH DISASTER CONDITIONS.
THIS QUESTIONNAIRE AND A SIMILAR ONE DEALING WITH
WATER AND SEWAGE TREATMENT OPERATIONS (DEVELOPED
UNDER A PREVIOUS CONTRACT) WERE THEN ADMINISTERED
TO THE FOUR CITIES. FINDINGS FROM BOTH
QUESTIONNAIRES ARE SUMMARIZED AND EVALUATED.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-643 527 13/2 15/6
ENGINEERING-SCIENCE INC ARCADIA CALIF
CIVIL DEFENSE ASPECTS OF MUNICIPAL WATER
SYSTEMS.
DESCRIPTIVE NOTE: FINAL REPT.,
NOV 66 32P HARMON, JUDSON A. ;
CONTRACT: PH-109-66-15

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (•WATER SUPPLIES, URBAN AREAS),
(•CIVIL DEFENSE SYSTEMS, WATER SUPPLIES), NUCLEAR
WARFARE, WATER POLLUTION, PURIFICATION, PUBLIC
HEALTH, DISASTERS, UNITED STATES GOVERNMENT,
WATER, RECOVERY

(U)

THIS STUDY CONSIDERS THE CIVIL DEFENSE ASPECTS
OF MUNICIPAL WATER SUPPLY SYSTEMS AND DEVELOPS A
LISTING OF SIGNIFICANT CONSIDERATIONS, TECHNICAL DATA
AND INFORMATION, TO DESCRIBE THE CAPABILITY OF A
SYSTEM TO RECOVER AND TO CONTINUE TO SUPPLY AT LEAST
A MINIMUM ESSENTIAL LEVEL OF SUPPLY IN THE EARLY POST
NUCLEAR ATTACK PERIOD.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-644 442 15/3
HUDSON INST INC HARMON-ON-HUDSON N Y
ON DAMAGE ASSESSMENT MODELS,
DEC 66 63P AYRES, ROBERT J. I
REPT. NO. MI-693-NR

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (CIVIL DEFENSE SYSTEMS, DAMAGE
ASSESSMENT), (NUCLEAR WARFARE, RADIOACTIVE
FALLOUT), POPULATION, NUCLEAR WARFARE CASUALTIES,
BLAST, FIRES, NUCLEAR WEAPONS, WAR GAMES

(U)

COMPARISONS ARE PRESENTED FOR 14 COMPUTERIZED
DAMAGE-ASSESSMENT MODELS DEVELOPED BY 8
ORGANIZATIONS. COMPARATIVE METHODS OF SPECIFYING
DESIGNATED AND ACTUAL GROUND-ZEROS, LOCATION AND
DISTRIBUTION OF POPULATION AND OTHER ASSETS,
CASUALTIES, PROPERTY DAMAGE AND FALLOUT DEPOSITION
ARE DESCRIBED. SUBSIDIARY MODELS FOR DAMAGE AND
INJURY AS A FUNCTION OF BURST DISTANCE (FOR
BLAST), FALLOUT INTENSITY AS A FUNCTION OF WEAPON
SIZE, DISTANCE AND WIND SPEED, RADIATION MORTALITY AS
A FUNCTION OF EQUIVALENT RESIDUAL DOSE (ERD), AND
FIRES SPREAD AS A FUNCTION OF FUEL DENSITY,
DISTRIBUTION AND WIND CONDITIONS, AMONG OTHERS, ARE
DISCUSSED. APPROXIMATIONS AND POTENTIAL SOURCES OF
ERROR ARE LISTED TOGETHER WITH SOME COMMENTS
REGARDING THE NEED FOR SENSITIVITY ANALYSIS AND THE
IMPLICATIONS OF MODEL UNCERTAINTIES FOR MODES OF
USE.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-646 627 15/3 5/1
STANFORD RESEARCH INST MENLO PARK CALIF
AN APPROACH TO DEFINING POSTATTACK RECOVERY
MANAGEMENT CONCEPTS AND TECHNIQUES. (U)
NOV 66 62P CLARK, DONALD E. MILLER,
CARL F. HOPKINS, GEORGE I. I
CONTRACT: OCU-OS-63-149
PROJ: SRI-MU-4536

UNCLASSIFIED REPORT

DESCRIPTORS: (•NUCLEAR EXPLOSION DAMAGE,
COUNTERMEASURES), (•COUNTERMEASURES, MANAGEMENT
ENGINEERING), MANPOWER STUDIES, COST EFFECTIVENESS,
MANAGEMENT PLANNING, RECOVERY, SURVIVAL,
ENVIRONMENT, MANAGEMENT CONTROL SYSTEMS, CIVIL
DEFENSE SYSTEMS (U)

POTENTIAL POSTATTACK COUNTERMEASURES, UNDER THE SIX
GENERAL CATEGORIES OF PROTECTIVE, RADIOLOGICAL,
MEDICAL, ECOLOGICAL, ECONOMIC, AND SOCIAL, ARE LISTED
AND DISCUSSED BRIEFLY. A FUNCTIONAL APPROACH TO
THE DEVELOPMENT OF POSTATTACK RECOVERY MANAGEMENT
TECHNIQUES BASED ON CURRENT KNOWLEDGE IS SUGGESTED,
AND PRESENT DEVELOPMENTAL LIMITATIONS ARE INDICATED.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-647 302 15/2 15/3 6/18
STANFORD RESEARCH INST MENLO PARK CALIF
DECONTAMINATION SCHEDULING PROCEDURES FOR RADEF
SYSTEMS, (U)
AUG 66 84P LEE, HONG I
CONTRACT: N228(62479)65421
PROJ: SK1-MU-5069
MONITOR: USNRDL TRC-42

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-629 784.

DESCRIPTORS: (•DECONTAMINATION, MANAGEMENT
PLANNING), (•RADIOLOGICAL WARFARE, •CIVIL DEFENSE
SYSTEMS), RADIOACTIVE FALLOUT, FALLOUT SHELTERS,
COUNTERMEASURES, HEALTH PHYSICS (U)
IDENTIFIERS: RADEF SYSTEMS (U)

THE REPORT PRESENTS A DECONTAMINATION SCHEDULING
PROCEDURE THAT PERMITS THE USER TO CORRELATE TARGET
ANALYSIS RESULTS, SHELTER PROTECTION FACTORS, AND
DECONTAMINATION DATA AND SYSTEMATICALLY OBTAIN
FEASIBLE DECONTAMINATION ASSIGNMENTS AND
DECONTAMINATION SCHEDULES. BECAUSE THE PROCEDURE
DELINEATES INDIVIDUAL EXPOSURE DOSES FOR ALL
CONTEMPLATED EXPOSURE PERIODS, CLEAR CHOICES OF
PERSONNEL ASSIGNMENTS AND SCHEDULING OPTIONS ARE
PRESENTED. SCHEDULING EXAMPLES ARE GIVEN TO
DEMONSTRATE THE PROCEDURE, AND PROCEDURAL AIDS ARE
INCLUDED TO MINIMIZE DECONTAMINATION SCHEDULING
CALCULATIONS. THE REPORT ALSO DEMONSTRATES HOW THE
DECONTAMINATION SCHEDULING PROCEDURE MAY BE USED TO
EVALUATE THE EFFECTIVENESS OF RADEF SYSTEMS. THE
EXAMPLES FOR DECONTAMINATION SCHEDULING AND FOR
RADEF SYSTEM EVALUATION INDICATE THAT TARGET AREA
DECONTAMINATION IS A TASK REQUIRING A RELATIVELY
LARGE DECONTAMINATION ORGANIZATION. (AUTHOR) (U)

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-647 802 15/6 5/11
HUMAN SCIENCES RESEARCH INC MCLEAN VA
A STUDY OF THE DEMOGRAPHY OF NUCLEAR WAR, (U)
MAY 66 114P PENDLETON, WILLIAM A. ;
REPT. NO. HSR-RR-66/14-PR
TASK: 3514A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-647 803.

DESCRIPTORS: (*NUCLEAR WARFARE, POPULATION),
(*CIVIL DEFENSE SYSTEMS, URBAN PLANNING),
NUCLEAR EXPLOSIONS, URBAN AREAS, SOCIOLOGY,
NUCLEAR EXPLOSION DAMAGE, ENVIRONMENT, ECOLOGY,
PREDICTIONS (U)

THE BASIC PROBLEM WITH WHICH THIS REPORT IS CONCERNED IS THAT OF DETERMINING THE KINDS OF DEMOGRAPHIC CHANGE THAT MIGHT RESULT FROM A RANGE OF NUCLEAR ATTACKS, ASCERTAINING THE EFFECTS OF THOSE CHANGES ON THE FUTURE OF THE SURVIVING POPULATIONS, AND INDICATING POSSIBLE AREAS FOR CIVIL DEFENSE ACTION AND PLANNING. EARLIER STUDIES OF THE DEMOGRAPHY OF NUCLEAR WAR WERE EXAMINED AND THEIR RELEVANT CONCLUSIONS AND METHODOLOGY INCORPORATED IN THE REPORT. A DIFFERENT METHODOLOGY--EXPECTED TO BE MORE SENSITIVE TO COMPOSITIONAL EFFECTS--WAS THEN DESIGNED. THE NEW METHODOLOGY WAS TESTED AND FOUND TO BE MORE EFFECTIVE THAN THE OLD. SURVIVING POPULATIONS REPRESENTING A WIDE RANGE OF VARIATION IN ATTACK CONDITIONS WERE CREATED ON THE BASIS OF BOTH OLD AND NEW METHODOLOGIES, AND THE DEMOGRAPHIC SIGNIFICANCE OF THESE POPULATIONS WAS EXAMINED. ASSUMING A RANGE OF POST-ATTACK DEMOGRAPHIC CONDITIONS, A SERIES OF PROJECTIONS WAS MADE ON THE SURVIVING POPULATIONS. THE DEMOGRAPHIC SIGNIFICANCE OF THE RECOVERING POPULATIONS WAS THEN EXAMINED. ON THE BASIS OF THE ANALYSIS A SERIES OF RECOMMENDATIONS RELEVANT TO CIVIL DEFENSE PLANNING WAS MADE: WITHIN THE FRAMEWORK OF THIS ANALYSIS THE CRUCIAL VARIABLE IS THE DEMOGRAPHIC PATTERN OF THE CITY. CHANGES IN COMPOSITION, AS WELL AS SIZE, COULD BE OF SUBSTANTIAL MAGNITUDE AND WOULD LAST FOR GENERATIONS IN SOME CASES. CITIES DIFFER IN THE KINDS AND MAGNITUDES OF CHANGE TO WHICH THEY MIGHT BE SUBJECTED. CONSIDERABLE VARIATION IN THE DEMOGRAPHY OF SURVIVING POPULATIONS CAN BE EXPECTED; THAT VARIATION WOULD BE RELATED TO POLICY DECISIONS; AND THOSE DECISIONS SHOULD THEREFORE BE EXAMINED FOR THEIR DEMOGRAPHIC IMPLICATIONS. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-651 009 13/12 13/13 15/6
LIN (T Y) AND ASSOCIATES VAN NUYS CALIF.
MANUAL OF DATA GATHERING PRACTICE RELATIVE TO THE
REUSABILITY OF BUILDINGS AFTER A WARFIRE. (U)
MAY 66 48P ADAMS, RAY ; STUBBS, IAN R. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH
STANFORD RESEARCH INST., MENLO PARK, CALIF.
CONTRACT UCD-PS-64-201, SEE ALSO AD-651 010.

DESCRIPTORS: (•BUILDINGS, FINES), (•WARFARE,
CIVIL DEFENSE SYSTEMS), FIRE EXTINGUISHERS,
COSTS, STRUCTURES, CONSTRUCTION MATERIALS,
WALLS, FLOODS, DIGITAL COMPUTERS, PROBLEM
SOLVING (U)

THE MANUAL DEALS WITH PERTINENT CONDITIONS OF, IN
AND AROUND BUILDINGS, TERMINOLOGY, AND SURVEYING
TECHNIQUE IN DETAIL. THE APPENDICES CONTAIN TABLES
OF PERTINENT FACTORS AND A FAIRLY SIMPLE METHOD FOR
USE IN ESTIMATING THE PERCENTS OF BUILDING COST TO BE
ASSIGNED TO EACH OF THE SEVERAL COMPONENT MAJOR
ASSEMBLIES. THE SCOPE OF DETAIL, WHICH IS NOT
USEFUL UNLESS PRESENTED IN DETAIL, PRECLUDES THE
CONDENSATION OF THIS DOCUMENT. ONLY ITS CHARACTER
AND USE MAY BE ABSTRACTED MEANINGFULLY. (U)

UNCLASSIFIED

DLC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-651 DIO 13/12 13/13 15/6
LIN (T Y) AND ASSOCIATES VAN NUYS CALIF.
TRIAL SURVEY AND ANALYSIS OF SEVERAL BUILDINGS
RELATIVE TO THEIR REUSABILITY AFTER A WARFIRE. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
MAY 66 64P ADAMS, HAY ; STUBBS, IAN R. :

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH
STANFORD RESEARCH INST., MENLO PARK, CALIF.
CONTRACT OCD-PS-64-201. SEE ALSO AD-651 009.

DESCRIPTORS: (•BUILDINGS, FIRES), (•WARFARE,
CIVIL DEFENSE SYSTEMS), EXPOSURE, IGNITION,
COMPUTER PROGRAMS, INSTRUCTION MANUALS, FIRE
SAFETY, NUCLEAR WARFARE, CONCRETE, REINFORCING
MATERIALS, STRUCTURES (U)

PERFORMANCE TEST OF COMPUTER PROGRAM, DEVELOPED BY
PERFORMING AGENCY, WHICH PROCESSES BUILDING DATA
OBTAINED BY SURVEYS RELATIVE TO EXTERNAL FIRE
EXPOSURE, INTERIOR FIRE LOAD, ASTM FIRE RATING OF
COMPONENTS AND PASSIVE AND ACTIVE FIRE DEFENSES, AND
PRODUCES THE PROBABILITY OF THE BUILDING'S IGNITION
BY EXTERNAL EXPOSURE TO BURNING ADJACENT BUILDINGS OR
YARD STORAGE AND A RELATIVE INDEX, ON A SCALE FROM
ZERO TO ONE, OF THE BUILDING'S POST-WARFIRE
REUSABILITY IF IT DOES SUFFER INTERNAL IGNITION.
THIRTEEN LOS ANGELES AREA BUILDINGS WERE
SURVEYED AND ANALYZED AND RESULTS APPEAR TO BE
REASONABLE. THE ACCOMPANYING USER'S MANUAL
PROVIDES STEP-BY-STEP INSTRUCTIONS FOR GUIDANCE OF
PERSONS MAKING BUILDING SURVEYS TO GATHER INPUT DATA
FOR THE PROGRAM. PERTINENT CONDITIONS OF, IN AND
AROUND BUILDINGS, TERMINOLOGY, AND SURVEYING AND DATA
RECORDING TECHNIQUES ARE GIVEN IN DETAIL. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-651 098 15/3 5/1 5/3
HUMAN SCIENCES RESEARCH INC MCLEAN VA
CONSUMER BEHAVIOR AND WORKER PARTICIPATION IN
RECOVERY ACTIVITIES. (U)
FEB 67 HRP CHENAULT, WILLIAM W. ;
NORDLIE, PETER G. ;
REPT. NO. HSR-RK-67/5-T1
TASK: 3542A

UNCLASSIFIED REPORT

DESCRIPTORS: (CIVIL DEFENSE SYSTEMS, RECOVERY),
NUCLEAR WARFARE, ORGANIZATIONS, SURVIVAL,
CONSUMPTION, DISTRIBUTION (ECONOMICS),
BEHAVIOR, MOTIVATION, DISASTERS, COMMUNICATION
SYSTEMS, PERFORMANCE (HUMAN), VULNERABILITY,
MANPOWER, POPULATION (U)
IDENTIFIERS: POSTATTACK OPERATIONS (U)

THE STUDY IS CONCERNED WITH THE PROBLEM OF SECURING
THE PARTICIPATION OF THE SURVIVORS OF A NUCLEAR
ATTACK IN AN ORGANIZED RECOVERY EFFORT. IT
DESCRIBES THE POTENTIAL EFFECTS ON MOTIVATION AND
ORGANIZATION OF THE DIFFERENT LOCALIZED PERSPECTIVES
IN WHICH INDIVIDUAL SURVIVORS WOULD VIEW DISASTER AND
RESPOND TO DEMANDS FOR NATIONALLY ORIENTED WORK
ACTIVITY. THE STUDY ASSUMES THAT RECOVERY WOULD
REQUIRE THE INTEGRATION OF RECOVERY ACTIVITIES ON A
NATIONAL BASIS, THAT FORCING FUNCTIONS OF TIME WOULD
BE PLACED ON THE PERFORMANCE OF CRITICAL RECOVERY
ACTIVITIES, THAT SURVIVORS WOULD PERCEIVE A SCARCITY
OF CONSUMER ITEMS (ESPECIALLY FOOD), AND THAT THE
NATURAL PROCLIVITIES AND MOTIVATIONS OF SURVIVORS
WOULD LEAD THEM TO ENGAGE IN ACTIVITIES OTHER THAN
THOSE REQUIRED BY AN INTEGRATED NATIONAL EFFORT.
GIVEN THOSE ASSUMPTIONS, THE REPORT DESCRIBES A SET
OF SYSTEM CHARACTERISTICS THAT WOULD, IF BUILT INTO A
DISTRIBUTION SYSTEM FOR CONSUMER GOODS, ALLOW THE
SYSTEM TO PERFORM TWO TASKS: (1) MEET CONSUMER
NEEDS AND (2) PROVIDE THE MEANS FOR GUIDING THE
POSTATTACK BEHAVIOR OF SURVIVORS TOWARD THE
PERFORMANCE OF CRITICAL RECOVERY ACTIVITIES.
(AUTHOR) (U)

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DLC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-651 454 15/5 15/6 13/6
STANFORD RESEARCH INST MENLO PARK CALIF
EFFECTS OF NUCLEAR ATTACK ON FREIGHT TRANSPORTATION
SYSTEMS: INTERACTIONS AND COMPARISONS AMONG MODES. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
MAR 67 SSP DIXON, HARVEY L. STEBBEN,
THOMAS H. ;
PROJ: SRI-MU-4949-150

UNCLASSIFIED REPORT

DESCRIPTORS: (•TRANSPORTATION, •NUCLEAR EXPLOSION
DAMAGE), CIVIL DEFENSE SYSTEMS, DAMAGE ASSESSMENT,
RAILROADS, AIRCRAFT, ROADS, CARGO VEHICLES,
VEHICLES, WEAPONS, VULNERABILITY (U)

THE OPERATIONS AND EQUIPMENT USED IN TRANSFERRING
VEHICLE LOADS BETWEEN TWO VEHICLES OR BETWEEN A
VEHICLE AND A TERMINAL ARE EXAMINED FOR SEVEN
DIFFERENT CLASSES OF CARGO. FOR EACH OF THESE
CLASSES, THE USUAL METHOD OF LOAD TRANSFER IS
DISCUSSED, AND EXPEDIENT METHODS THAT COULD BE USED
IN A POSTATTACK SITUATION ARE SUGGESTED. ST.
LOUIS, MISSOURI IS USED TO ILLUSTRATE THE PROBLEM
OF MOVING CARGO THROUGH A DAMAGED AREA AFTER A
NUCLEAR ATTACK. SEVERAL ALTERNATIVE METHODS OF
MOVING CARGO VI. MULTIPLE TRANSPORTATION MODES ARE
ANALYZED, AND A SIMPLE PROCEDURE FOR DETERMINING THE
MINIMUM-TIME ROUTE AMONG THE ALTERNATIVES IS
PROPOSED. THE TRANSPORTATION RESOURCES REQUIRED TO
DELIVER THE MINIMUM SUPPLIES FOR SURVIVOR SUPPORT IN
THE ST. LOUIS AREA ARE ANALYZED FOR DIFFERENT
MIXES OF TRAINS AND TRUCKS AND FOR MOVEMENTS OF THE
SUPPLIES OVER A RANGE OF DISTANCES. A GENERAL
SUMMARY OF THE VULNERABILITY OF EACH TRANSPORTATION
MODE TO NUCLEAR ATTACK IS PROVIDED, AND THE REMEDIAL
ACTIONS THAT MIGHT BE TAKEN IN THE PREATTACK PERIOD
TO ENHANCE POSTATTACK CAPABILITY ARE DISCUSSED.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-651 756 15/2 15/3 6/18
STANFORD RESEARCH INST MENLO PARK CALIF
SUMMARY OF RADIOLOGICAL TARGET ANALYSIS PROCEDURES
FOR DECONTAMINATION SCHEDULING, (U)
APR 67 42P LEE, HONG I
CONTRACT: N00228-66-C-0231
PROJ: SRI-MU-5806

UNCLASSIFIED REPORT

DESCRIPTORS: (•RADIOLOGICAL WARFARE, •TARGETS),
RADIOLOGICAL CONTAMINATION, FALLOUT SHELTERS,
RADIOACTIVE FALLOUT, CIVIL DEFENSE SYSTEMS,
COUNTERMEASURES, ORGANIZATIONS, SCHEDULING,
DECONTAMINATION, TESTS, DECONTAMINATION KITS (U)

THE SALIENT FEATURES OF A PROPOSED RADIOLOGICAL
TARGET ANALYSIS PROCEDURE ARE PRESENTED AND
DISCUSSED. ALSO PRESENTED IS A STEPWISE PROCEDURE
FOR APPLYING THE RESULTING RESIDUAL NUMBERS TO
SCHEDULING DECONTAMINATION OPERATIONS WITHIN A SET OF
LIMITING EXPOSURE DOSE CRITERIA. BY ANALYSIS OF
THE DATA OBTAINED THROUGH THE USE OF THESE
PROCEDURES, THE RELATIONSHIP OF DECONTAMINATION AS A
COUNTERMEASURE SYSTEM WAS EVALUATED WITH RESPECT TO
EXISTING AND PROPOSED SHELTER SYSTEMS. THE RANGE
OF FALLOUT INTENSITIES WHERE DECONTAMINATION WOULD BE
POTENTIALLY USEFUL WAS FOUND TO INCREASE WITH BETTER
SHELTER SYSTEMS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-652 597 5/3 15/3 13/9
INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA ECONOMIC AND
POLITICAL STUDIES DIV
INDUSTRIAL HARDENING CLASSIFICATION: A METODOLOGY
FOR SIMPLIFYING THE EVALUATION OF HARDENING COSTS.
VOLUME 1. TEXT AND APPENDIX A, (U)
OCT 66 56P BICKLEY, LEONARD J. ISACHS.
ABNER ;
REPT. NO. STUDY-S-263-VOL-1
TASK: 4115A
MONITOR: IDA/MQ 66-5472

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-652 598. VOL. 2.

DESCRIPTORS: (•INDUSTRIES, •NUCLEAR EXPLOSIONS),
CIVIL DEFENSE SYSTEMS, HARDNESS, CLASSIFICATION,
WEAPONS, INDUSTRIAL EQUIPMENT, MANUFACTURING
METHODS, COSTS, ANALYSIS, ECONOMICS (U)

THE STUDY DESCRIBES A METHOD FOR ANALYZING THE
MANUFACTURING INDUSTRY IN ORDER TO DEVELOP AN
ESTIMATE OF THE COST OF HARDENING ECONOMIC RESOURCES
AGAINST NUCLEAR BLAST EFFECTS. INSTEAD OF THE
DIRECT APPROACH OF TAKING REPRESENTATIVE COST SAMPLES
FROM EACH SEPARATE INDUSTRY, THE STANDARD
INDUSTRIAL CLASSIFICATIONS ARE RELATED TO CERTAIN
PHYSICAL (HARDNESS) CHARACTERISTICS OF THE PLANT
AND EQUIPMENT ASSOCIATED WITH THE PRODUCT. CLASSES
OF MANUFACTURED PRODUCTS ARE TRANSLATED INTO THE
CLASSES OF EQUIPMENT WHICH MAKE THEM AND THE
EQUIPMENT IS EVALUATED IN TERMS OF HARDNESS
CHARACTERISTICS. THIS REDUCES BOTH THE NUMBER OF
PLANT AND EQUIPMENT CATEGORIES RELATED TO PRODUCT
CLASSIFICATIONS AND THE NUMBER OF SAMPLES THAT NEED
BE EVALUATED FOR HARDENING COSTS. TO FURTHER
REDUCE THE NUMBER OF SAMPLES REQUIRED, A STATISTICAL
APPROACH IS SUGGESTED THAT WOULD ENABLE HARDENING
COSTS ASSOCIATED WITH CERTAIN INDUSTRIES CLASSIFIED
UNDER THIS SYSTEM TO BE DERIVED FROM COMBINATIONS OF
KNOWN COSTS OF OTHER GROUPS OF INDUSTRIES. WHEREAS
THE ANALYSIS IN THIS STUDY HAS BEEN LIMITED TO THE
MANUFACTURING INDUSTRY, THE TECHNIQUES DEVELOPED
SHOULD BE EQUALLY (AND IN SOME CASES MORE SIMPLE)
APPLICABLE TO THE WHOLE SPECTRUM OF AMERICAN
INDUSTRY, AND TO WEAPON EFFECTS OTHER THAN BLAST.
(AUTHOR) (U)

UNCLASSIFIED

/BML27

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-652 598 5/3 15/3 13/9
INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA ECONOMIC AND
POLITICAL STUDIES DIV
INDUSTRIAL HARDENING CLASSIFICATION: A METHODOLOGY
FOR SIMPLIFYING THE EVALUATION OF HARDENING COSTS.
VOLUME II. APPENDIX B, (U)
OCT 66 147P BICKLEY, LEONARD J. ISACHS.
ABNER ;
REPT. NO. STUDY-S-263-VOL-2
TASK: 4115A
MONITOR: IDA/HQ 66-5473

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-652 597, VOL I.

DESCRIPTORS: (*INDUSTRIES, *NUCLEAR EXPLOSIONS),
CIVIL DEFENSE SYSTEMS, HARDNESS, CLASSIFICATION,
WEAPONS, INDUSTRIAL EQUIPMENT, MANUFACTURING
METHODS, COSTS, ANALYSIS, ECONOMICS, PROTECTION (U)

THE STUDY DESCRIBES A METHOD FOR ANALYZING THE
MANUFACTURING INDUSTRY IN ORDER TO DEVELOP AN
ESTIMATE OF THE COST OF HARDENING ECONOMIC RESOURCES
AGAINST NUCLEAR BLAST EFFECTS. INSTEAD OF THE
DIRECT APPROACH OF TAKING REPRESENTATIVE COST SAMPLES
FROM EACH SEPARATE INDUSTRY, THE STANDARD
INDUSTRIAL CLASSIFICATIONS ARE RELATED TO CERTAIN
PHYSICAL (HARDNESS) CHARACTERISTICS OF THE PLANT
AND EQUIPMENT ASSOCIATED WITH THE PRODUCT. CLASSES
OF MANUFACTURED PRODUCTS ARE TRANSLATED INTO THE
CLASSES OF EQUIPMENT WHICH MAKE THEM AND THE
EQUIPMENT IS EVALUATED IN TERMS OF HARDNESS
CHARACTERISTICS. THIS REDUCES BOTH THE NUMBER OF
PLANT AND EQUIPMENT CATEGORIES RELATED TO PRODUCT
CLASSIFICATIONS AND THE NUMBER OF SAMPLES THAT NEED
BE EVALUATED FOR HARDENING COSTS. TO FURTHER
REDUCE THE NUMBER OF SAMPLES REQUIRED, A STATISTICAL
APPROACH IS SUGGESTED THAT WOULD ENABLE HARDENING
COSTS ASSOCIATED WITH CERTAIN INDUSTRIES CLASSIFIED
UNDER THIS SYSTEM TO BE DERIVED FROM COMBINATIONS OF
KNOWN COSTS OF OTHER GROUPS OF INDUSTRIES. WHEREAS
THE ANALYSIS IN THIS STUDY HAS BEEN LIMITED TO THE
MANUFACTURING INDUSTRY, THE TECHNIQUES DEVELOPED
SHOULD BE EQUALLY (AND IN SOME CASES MORE SIMPLE)
APPLICABLE TO THE WHOLE SPECTRUM OF AMERICAN
INDUSTRY, AND TO WEAPON EFFECTS OTHER THAN BLAST.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-653 466 5/11 15/3
HUMAN SCIENCES RESEARCH INC MCLEAN VA
KINSHIP AND VOLUNTARY ORGANIZATION IN POST-
THERMONUCLEAR ATTACK SOCIETY; SOME EXPLORATORY
STUDIES, (U)

SEP 65 338P GREER, SCOTT A. WINCH.
ROBERT F. I
REPT. NO. HSR-RR-65/1-CR
CONTRACT: OCD-OS-63-114

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH
NORTHWESTERN UNIV., EVANSTON, ILL., CENTER FOR
METROPOLITAN STUDIES. SEE ALSO AD-653 468.

DESCRIPTORS: (*SOCIOLOGY, UNITED STATES),
(*CIVIL DEFENSE SYSTEMS, SOCIOLOGY), SOCIAL
PSYCHOLOGY, ORGANIZATIONS, URBAN AREAS,
VULNERABILITY, DISASTERS, SOCIAL SCIENCES,
RECOVERY, STATISTICAL DATA,
REACTION(PSYCHOLOGY), POPULATION, BEHAVIOR,
SURVIVAL, NUCLEAR WARFARE (U)

IDENTIFIERS: POST ATTACK OPERATIONS, FAMILIES (U)

THE INCIDENCE OF FAMILY-KINSHIP AND VOLUNTARY
ORGANIZATIONAL PATTERNS IN CONTEMPORARY UNITED
STATES SOCIETY ARE EXAMINED. MANY PRIMARY FAMILY
UNITS, COMPOSED OF PARENTS-IMMEDIATE CHILDREN
(*NUCLEAR FAMILIES*), HAVE TIES WITH RELATIVES
OUTSIDE THE NUCLEAR FAMILY, WHICH SUGGESTS THE
EXISTENCE OF PATTERNS OF EXTENDED FAMILISM AND OF
KINSHIP NETWORKS. PARTICIPATION IN VOLUNTARY
ORGANIZATIONS IS A WIDELY PERVASIVE FEATURE OF
AMERICAN SOCIETY, OFFERING A MAJOR LEVEL AND FOCUS
OF COMMUNITY ORGANIZATION AND ACTION.
PARTICIPATION IN BOTH KINSHIP RELATIONS AND
VOLUNTARY ORGANIZATIONS WAS FOUND TO VARY ON SEVERAL
DIMENSIONS. KINSHIP RELATIONS VARY MOST STRONGLY
BY *ETHNICITY*--MEASURED BY THE RELIGIOUS, CULTURAL,
AND/OR RACIAL BACKGROUND OF THE FAMILY.
DIFFERENCES IN PATTERNS OF KINSHIP AND VOLUNTARY
ORGANIZATION TEND TO BE ASSOCIATED WITH DIFFERENCES
AMONG SOCIAL AREAS WHICH CAN BE DESCRIBED WITHIN THE
PHYSICAL SPACE FORMED BY METROPOLITAN COMMUNITIES.
SEVERAL PROPOSITIONS ARE FORMED, RELATING MASS DATA
FOR AMERICAN CITIES AND THE ASSOCIATIONAL NETWORKS
OF LOCALITIES. (1) THERE ARE CONSTANT
RELATIONSHIPS BETWEEN SUB-POPULATION TYPES AND
PARTICIPATION IN THE LOCAL AREA AS A COMMUNITY.
THE LATTER INCREASES WITH DECLINING URBANISM.
(2) PARTICIPATION IN ALL FORMS OF VOLUNTARY (U)

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-653 468 5/11 15/3
HUMAN SCIENCES RESEARCH INC MCLEAN VA
VULNERABILITIES OF SOCIAL STRUCTURE: STUDIES OF THE
SOCIAL DIMENSIONS OF NUCLEAR ATTACK. (U)
DEC 66 764P HEER, DAVID M.; SMELSER,
NEIL J.; SWEAREN, HOWARD R.; VESTERMARK, S.
D. ; JR.; WINTER, SIDNEY G. ; JR;
REPT. NO. HSR-RR-66/21-CR
CONTRACT: OCD-OS-63-114
TASK: OCD-43218

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-653 466.

DESCRIPTORS: (+NUCLEAR WARFARE, +SOCIOLOGY),
(+CIVIL DEFENSE SYSTEMS, SOCIOLOGY), SOCIAL
PSYCHOLOGY, REACTION(PSYCHOLOGY), EMOTIONS,
URBAN AREAS, VULNERABILITY, POPULATION,
BEHAVIOR, FALLOUT SHELTERS, RECOVERY, SURVIVAL,
DISASTERS, POLITICAL SCIENCE, ECONOMICS, UNITED
STATES GOVERNMENT, STATISTICAL DATA (U)
IDENTIFIERS: POST ATTACK OPERATIONS (U)

POSSIBLE PATTERNS OF SOCIAL EFFECTS AND SOCIETAL
VULNERABILITIES WHICH WOULD RESULT FROM NUCLEAR
ATTACK ON THE UNITED STATES ARE SURVEYED THROUGH
ANALYSES OF THE SOCIAL SCIENCES. THE ANALYSES ARE
CENTERED ON THE VARIOUS WAYS IN WHICH SOCIAL
STRUCTURE AND SOCIAL INSTITUTIONS MAY BE CONSIDERED
TO BE VULNERABLE TO NUCLEAR ATTACK. A MONOGRAPH IS
PRESENTED ON THE GENERAL PROBLEMS OF SOCIETAL
ANALYSIS POSED BY ATTEMPTS TO STUDY THE
VULNERABILITIES OF SOCIAL STRUCTURE TO NUCLEAR
ATTACK. THE CENTRAL THEME IS THAT LEVELS OF
BEHAVIORAL ORDERING BEYOND THE INDIVIDUAL --
PARTICULARLY SOCIAL INSTITUTIONAL AND SOCIAL
ORGANIZATIONAL PROCESSES -- SET THE DIMENSIONS FOR
THE SOCIAL EFFECTS OF ATTACK. FIVE ESSAYS REPORT
ON PARTICULAR DOMAINS OF SOCIAL EFFECTS WHICH MAY
RESULT FROM NUCLEAR ATTACK AND ON PARTICULAR
METHODOLOGICAL PROBLEMS WHICH MUST BE SOLVED IN THE
STUDY OF SOCIAL EFFECTS. TOPICS CONSIDERED INCLUDE
INDIVIDUAL-HUMAN AND SOCIAL PSYCHOLOGICAL DIMENSIONS
OF NUCLEAR ATTACK, DEMOGRAPHIC EFFECTS AND POPULATION
RECOVERY PROBLEMS, ECONOMIC RECOVERY AFTER NUCLEAR
WAR, POLITICAL-ADMINISTRATIVE DIMENSIONS OF NUCLEAR
ATTACK, AND THE USE OF ESPECIALLY THE COMPARATIVE
METHOD OF SOCIAL ANALYSIS AS A TOOL FOR DEVELOPING
KNOWLEDGE ABOUT SOCIETAL VULNERABILITY. A NUMBER
OF WAYS ARE TRACED IN WHICH THE SOCIAL DIMENSIONS AND
DOMAINS OF NUCLEAR ATTACK INDICATE PROBLEMS. (U)

UNCLASSIFIED

DJC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-653 475 18/8
OFFICE OF CIVIL DEFENSE WASHINGTON D C POSTATTACK RESEARCH
DIV
FALLOUT RADIATION EXPOSURE CONTROL (AN INTRODUCTION);

65 53P GREENE, JACK C. ;

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (•RADIOACTIVE FALLOUT, •CONTROL),
EXPOSURE, FALLOUT SHELTERS, CONTAMINATION,
SOLUBILITY, RADIOACTIVITY, WATER SUPPLIES, CIVIL
DEFENSE SYSTEMS, FOOD, INTENSITY, RADIOACTIVE
DECAY, EFFECTIVENESS, PHYSICAL PROPERTIES, TESTS,
PROTECTION

(U)

THE PAPER IS INTENDED FOR USE BY POSTATTACK
RESEARCH CONTRACTORS AND OTHER INTERESTED PERSONS AS
A SUMMARY STATEMENT ON THE PROBLEMS OF RADIATION
EXPOSURE CONTROL WITH EMPHASIS ON THE PERIOD AFTER
PEOPLE EMERGE FROM SHELTER. THIS PAPER IS THE
FIRST OF ITS KIND ON THE SUBJECT AND, FOR THIS
REASON, CERTAIN BACKGROUND MATERIAL IS INCLUDED.
AN EFFORT IS MADE TO IDENTIFY AND DISCUSS PROBLEMS
IN SIMPLE AND DIRECT LANGUAGE, AND TO RELATE TO
OPERATIONAL SITUATIONS. LOSS OF PRECISION THAT
RESULTS THEREBY IS NOT LIKELY TO CHANGE THE
IMPLICATIONS AND CONCLUSIONS IN ANY IMPORTANT WAY.
REFERENCES LISTED AT THE END OF THE PAPER CONTAIN
THE UP-TO-DATE SCIENTIFIC INFORMATION ON THIS
SUBJECT; ALSO, FOOTNOTES ARE USED IN SOME CASES TO
PROVIDE SUPPLEMENTAL INFORMATION.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-654 201 15/3 5/10
HUMAN SCIENCES RESEARCH INC MCLEAN VA
SPECIAL PROBLEMS OF CHILDREN IN CIVIL DEFENSE
PLANNING.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,
FEB 67 SSP LUTZ, FRANK W. I
REPT. NO. HSR-RR-67/3-CR
CONTRACT: OCS-OS-63-114
TASK: 4321B

UNCLASSIFIED REPORT

DESCRIPTORS: (•DISASTERS, •CHILDREN), NUCLEAR
WARFARE, CIVIL DEFENSE SYSTEMS, SHELTERS,
EDUCATION, MANAGEMENT PLANNING,
ADJUSTMENT (PSYCHOLOGY), SOCIAL PSYCHOLOGY,
GROUP DYNAMICS, BEHAVIOR
IDENTIFIERS: ORPHANS

(U)
(U)

THE STUDY IS A LIMITED RESEARCH EFFORT WHICH
ADDRESSES FOUR KINDS OF QUESTIONS OF POTENTIAL
INTEREST TO THE CIVIL DEFENSE PLANNER. (1)
WHAT EFFECTS ON CHILDREN CAN BE OBSERVED WHICH ARE
ATTRIBUTABLE TO THE EXISTENCE OF THE THREAT OR
POSSIBILITY OF NUCLEAR WAR. (2) WHAT IS KNOWN
ABOUT THE EFFECTS OF DISASTER AND FAMILY DISRUPTION
ON CHILDREN WHICH MIGHT HAVE SIGNIFICANCE FOR CIVIL
DEFENSE PLANNING. (3) WHAT IS KNOWN ABOUT
ALTERNATIVE APPROACHES TO THE CARE OF ORPHANS.
(4) WHAT ARE THE POSSIBLE USES OF SCHOOLS IN
SHELTER SYSTEMS AND WHAT ARE THE CONSIDERATIONS
INVOLVED. AVAILABLE EVIDENCE RELATED TO EACH OF
THESE GENERAL QUESTIONS IS REVIEWED AND DISCUSSED.
THE IMPLICATIONS OF THE FINDINGS WERE SUMMARIZED IN
RELATION TO THREE COMPONENTS OF CIVIL DEFENSE
PLANNING: (1) EDUCATION AND INFORMATION;
(2) SHELTER SYSTEM PLANNING; (3) POST-ATTACK
ORPHAN CARE. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-654 478 15/3
HUDSON INST INC HARMON-ON-HUDSON N Y
CRISIS CIVIL DEFENSE AND DETERRENCE, (U)
APR 67 85P ROCKETT, FREDERICK C. ;
REPT. NO. HI-777/2-RR

UNCLASSIFIED REPORT

DESCRIPTORS: (*CIVIL DEFENSE SYSTEMS, *USSR),
(*EASTERN EUROPE, CIVIL DEFENSE SYSTEMS),
(*CHINA, CIVIL DEFENSE SYSTEMS), DETERRENCE,
NATIONAL DEFENSE, UNITED STATES, TRANSPORTATION,
EVACUATION, URBAN AREAS, FALLOUT SHELTERS,
SURVIVAL, INDUSTRIES, VULNERABILITY, RECOVERY (U)

THE REPORT EXAMINES THE POTENTIAL OF THE SOVIET UNION, CHINA, AND SOME EUROPEAN NATIONS FOR REDUCING THEIR VULNERABILITY TO NUCLEAR ATTACK THROUGH EMERGENCY CIVIL DEFENSE MEASURES TAKEN DURING AN INTENSE CRISIS. IT IS ARGUED THAT THIS CD POTENTIAL BY SUBSTANTIALLY REDUCING THE NUMBER OF HOSTAGES AND PROVIDING AN IMPROVED RECOVERY CAPABILITY, HAS SOME IMPLICATIONS FOR U.S. DETERRENCE POLICY. THUS, IF DETERRENCE POLICY IS THOUGHT TO REQUIRE A LARGE NUMBER OF URBAN HOSTAGES, IT MAY NEED TO BE REVIEWED IN LIGHT OF THE ABOVE POSSIBILITY. A SURVEY OF THE CD POLICIES AND CAPABILITIES OF THE ABOVE COUNTRIES SUGGESTS THAT A PRIMARY CRISIS CD MEASURE COULD BE AN URBAN EVACUATION TO EXPEDIENT OR IMPROVISED FALLOUT PROTECTION. IN ADDITION, IN SOME CRISIS ENOUGH TIME MIGHT BE AVAILABLE TO MOVE SOME PERSONAL PROPERTY AND PERHAPS SOME CRITICAL INDUSTRIAL RESOURCES OUT OF THE MORE LIKELY TARGET AREAS.
(AUTHOR) (U)

UNCLASSIFIED

UDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-455 530 15/6 18/1 15/3
STANFORD RESEARCH INST MENLO PARK CALIF
METHODOLOGY FOR ASSESSING TOTAL VULNERABILITY, (U)
AUG 66 176P DRESCH, FRANCIS W. TELLIS,
HAZEL ;
PROJ: SRI-MU-4949-520

UNCLASSIFIED REPORT

DESCRIPTORS: (•VULNERABILITY, •SYSTEMS
ENGINEERING), (•NUCLEAR WARFARE, •THERMONUCLEAR
REACTIONS), ECONOMICS, SOCIOLOGY, POLITICAL
SCIENCE, CULTURE, ATTITUDES, INDUSTRIES,
NUMERICAL ANALYSIS, LABOR UNIONS, LANGUAGE,
SEMANTICS, UNITED STATES GOVERNMENT,
INTERACTIONS, INPUT-OUTPUT DEVICES, CIVIL DEFENSE
SYSTEMS (U)

THE STUDY WAS AN ATTEMPT TO APPLY SYSTEMS ANALYSIS
TO THE STUDY OF TOTAL VULNERABILITY. THE RESULTS
INDICATED THAT THE SYSTEMS CONCEPT COULD BE USED TO
GENERATE, THROUGH AN EXPANSIBLE SEQUENCE OF CHECK
LISTS, MANY PERTINENT QUESTIONS ABOUT THE STRUCTURE
OF OUR SOCIETY AND ITS INTRINSIC VULNERABILITIES.
THE ANALYSIS WAS CENTERED ON THE INDIVIDUAL AS A
POLITICAL, SOCIAL AND ECONOMIC AGENT AND 23 PRIMARY
INSTITUTIONS THAT INTERACT WITH HIM AND WITH EACH
OTHER. THE FIRST STEP WAS TO IDENTIFY AS WELL AS
POSSIBLE ALL INPUT AND OUTPUT VARIABLES FOR THE
INDIVIDUAL AND THE INSTITUTIONS, AND ALL THE SOURCES
OF EACH INPUT AND ALL THE DESTINATIONS FOR EACH
OUTPUT. EXECUTION OF THIS STEP ENCOUNTERED MANY
CONCEPTUAL AND SEMANTIC DIFFICULTIES, AND MADE IT
QUITE CLEAR THAT INITIAL HOPES OF INVESTIGATING
POSSIBLE INTER-RELATIONSHIPS QUANTITATIVELY WERE OVER
OPTIMISTIC OR PREMATURE. THE SYSTEMS DESCRIPTIONS
WERE RELATED TO THE PRIMARY AND SECONDARY EFFECTS OF
THERMONUCLEAR ATTACK. THEY WERE COMPARED WITH MORE
TRADITIONAL DESCRIPTIONS OF THE INSTITUTIONS AND WITH
TWO SIMPLIFIED POSTATTACK SCENARIOS REPRESENTING THE
PRIMARY EFFECTS OF A HEAVY COUNTER FORCE AND A HEAVY
COUNTER INDUSTRY ATTACK. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-655 649 15/6 18/3
HUMAN SCIENCES RESEARCH INC MCLEAN VA
THE FEASIBILITY OF DEVELOPING STANDARD DESCRIPTIONS
OF POST-ATTACK SITUATIONS. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
JUN 67 43P NORDLIE, PETER G. ;
REPT. NO. HSR-RR-67/8-SD
TASK: 3513A

UNCLASSIFIED REPORT

DESCRIPTORS: (•NUCLEAR WARFARE, PROBLEM SOLVING),
(•NUCLEAR EXPLOSIONS, FEASIBILITY STUDIES),
(•MANAGEMENT PLANNING, RECOVERY), NUCLEAR
EXPLOSION DAMAGE, ECONOMICS, UNITED STATES
GOVERNMENT, MILITARY GOVERNMENT, CIVIL DEFENSE
SYSTEMS, POPULATION, ENVIRONMENT, ECOLOGY (U)

THE OBJECTIVE OF THE STUDY WAS TO EVALUATE THE
FEASIBILITY OF DEVELOPING A PARTICULAR METHODOLOGICAL
TOOL TO AID IN CONDUCTING RESEARCH ON POST-ATTACK
PHENOMENON. ALL SUCH RESEARCH FACES THE NECESSITY
OF STUDYING PHENOMENA IN HYPOTHETICAL FUTURE
SITUATIONS. TO AID IN SOLVING THE MANY PROBLEMS
THIS FACT POSES, THE CONCEPT WAS ADVANCED OF A SET OF
STANDARD SITUATIONAL CASES REFLECTING THE RANGE OF
SITUATIONS NUCLEAR ATTACKS COULD CREATE. THE STUDY
WAS INITIATED TO DETERMINE IF THE CONCEPT OF THE
STANDARD SITUATIONAL CASE OFFERED SUFFICIENT PROMISE
FOR DEVELOPMENT AS A PRACTICALLY APPLICABLE RESEARCH
TOOL. IT WAS CONCLUDED THAT DEVELOPMENT OF THE
ORIGINAL CONCEPT OF THE STANDARD SITUATIONAL CASE WAS
NOT FEASIBLE PRIMARILY FOR TWO REASONS: (1)
THE INITIAL INABILITY TO PROVIDE CRITERIA FOR
DISTINGUISHING BETWEEN RELEVANT AND IRRELEVANT
INFORMATION, AND (2) THE FAILURE TO FIND MEANS
FOR REDUCING THE CASES TO A MANAGEABLE NUMBER.
HOWEVER, FROM A NUMBER OF THE INSIGHTS GAINED IN
THE COURSE OF THE STUDY, A NEW CONCEPT WAS DEVELOPED
DIFFERENT FROM, BUT AIMED AT THE SAME OBJECTIVES, AS
THE STANDARD SITUATIONAL CASE CONCEPT. THIS NEW
CONCEPT FOLLOWED FROM THE REALIZATION THAT THE
DEFINITION OF RECOVERY WOULD PROVIDE CRITERIA FOR
TESTING THE RELEVANCE OF INFORMATION ABOUT POST-
ATTACK SITUATIONS. THE REMAINDER OF THE STUDY WAS
DEVOTED TO FURTHER DEVELOPMENT OF THIS NEW CONCEPT OF
DEFINING CRITICAL INFORMATION CATEGORIES FOR POST-
ATTACK SITUATIONS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-655 665 15/7 15/3 15/6
HRB-SINGER INC STATE COLLEGE PA
PRELIMINARY AERIAL INFRARED FIRE MAPPING SYSTEMS
ANALYSIS.
DESCRIPTIVE NOTE: FINAL REPT. FEB 66-JUL 67,
APR 67 82P SHEEDER, RICHARD D. ; DUGUAY,
GRETCHEN L. ;
REPT. NO. HRB-97711-F
CONTRACT: NDD228-66-C-0344

(U)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR OFFICE OF CIVIL
DEFENSE THROUGH U. S. NAVAL RADIOLOGICAL DEFENSE
LAB., SAN FRANCISCO, CALIF.

DESCRIPTORS: (•NUCLEAR EXPLOSION DAMAGE, AERIAL
RECONNAISSANCE), (•FIRES, MAPPING), (•AERIAL
RECONNAISSANCE, •INFRARED PHOTOGRAPHY), MICHIGAN,
CIVIL DEFENSE SYSTEMS, AERIAL PHOTOGRAPHY, CIVIL
AVIATION, MOBILIZATION, AIRCRAFT, AIRPORTS,
DAMAGE ASSESSMENT, INFRARED IMAGES,
PHOTOINTERPRETATION

(U)

A DETAILED ANALYSIS OF FACTORS RELEVANT TO THE
INFRARED THERMAL MAPPING OF HYPOTHETICAL NUCLEAR
BURSTS IN THE STATE OF MICHIGAN WAS PERFORMED.
AREAS DEEMED CRITICAL TO THE RECOVERY OF THE STATE
WERE DETERMINED AND DESIGNATED TO BE THE AREAS MAPPED
IN THE EVENT THEY WERE STRUCK BY A NUCLEAR BURST.
A SURVEY OF CIVILIAN AIRCRAFT WAS PERFORMED TO
DETERMINE THE NUMBER AND DISTRIBUTION OF THOSE
POSSIBLY AVAILABLE TO PERFORM THE MAPPING FLIGHT.
THE TOTAL TIME FOR THE MAPPING MISSIONS WAS
COMPUTED FOR FOUR DIFFERENT THERMAL MAPPING SYSTEM
OPTIONS, AND FOR THREE DIFFERENT LEVELS OF MAPPING
RESOURCES. AN ANALYSIS OF THE NUMERICAL DATA WAS
PERFORMED. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-656 628 5/11 15/6
HUMAN SCIENCES RESEARCH INC MCLEAN VA
THEORIES OF SOCIAL CHANGE AND THE ANALYSIS OF NUCLEAR
ATTACK AND RECOVERY. (U)
JAN 67 190P SMELSER, NEIL J. ;
REPT. NO. HSR-RR-67/1-ME
TASK: OGD-4321B

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH
CALIFORNIA UNIV., BERKELEY, AND STANFORD RESEARCH
INST., CALIF.

DESCRIPTORS: (.SOCIOLOGY, .NUCLEAR WARFARE),
VULNERABILITY, DISASTERS, RECOVERY, CIVIL
DEFENSE SYSTEMS, COUNTERMEASURES, SOCIAL SCIENCES,
CULTURE

IDENTIFIERS: POST-ATTACK

(U)
(U)

SEVERAL DIFFERENT THEORETICAL ORIENTATIONS TOWARD
THE ANALYSIS OF SOCIAL CHANGE ARE PRESENTED IN ORDER
TO EXAMINE THE KINDS OF SOCIAL CHANGE PROCESSES WHICH
MIGHT BE CREATED BY NUCLEAR ATTACK. TO GAIN
INTELLECTUAL LEVERAGE ON THE PROBLEMS OF
UNDERSTANDING THE SOCIAL EFFECTS OF ATTACK AND THE
WAYS IN WHICH THESE ATTACK EFFECTS COULD LEAD TOWARD
INSTITUTIONAL DECLINE OR INSTITUTIONAL RECOVERY,
THESE POSSIBLE EFFECTS AND PATTERNS ARE VIEWED AS
UNUSUAL SPECIAL CASES OF THE LARGER ANALYTIC PROBLEM
OF FORMULATING GENERAL THEORIES OF SOCIAL CHANGE.
THUS, THE MONOGRAPH IS BOTH A GENERAL EXPLORATION
OF THE POWER OF EXISTING THEORIES AND MODELS OF
SOCIAL CHANGE AND A PARTICULAR APPLICATION OF SOCIAL
CHANGE THEORIES AND MODELS TO PROBLEMS OF DEFINING
AND PROJECTING SOCIAL EFFECTS OF NUCLEAR ATTACK. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-657 178 6/5 6/21

ROCHESTER UNIV N Y

TREATMENT OF ACUTE RADIATION INJURY UNDER MEDICALLY
AUSTERE CONDITIONS. (U)

APR 67 SIP INGRAM, M. ; AMES, W. R. ;
ANDERSON, C. G. ; ANDREWS, G. A. ; BOND, V. P.

REPT. NO. TRC-67-21

CONTRACT: OCD-PS-64-200

UNCLASSIFIED REPORT

DESCRIPTORS: (•RADIATION INJURIES, THERAPY),
NUCLEAR WARFARE CASUALTIES, RADIATION SICKNESS,
CIVIL DEFENSE SYSTEMS, FALLOUT SHELTERS,
MANAGEMENT ENGINEERING, RADIOPROTECTIVE AGENTS,
DISEASES, CONFINED ENVIRONMENTS, MORTALITY RATES,
INFECTIONS, HEMORRHAGE, SURGERY, DIAGNOSIS,
SURVIVAL (U)

THE REPORT SUMMARIZES THE WORK OF A COMMITTEE
CONVENED TO DEFINE, IN LIGHT OF PRESENT KNOWLEDGE,
THE BEST PLAN FOR MEDICAL MANAGEMENT OF LARGE NUMBERS
OF RADIATION CASUALTIES UNDER AUSTERE MEDICAL
CONDITIONS AND TO EVALUATE SPECIFIC COURSES OF
RESEARCH WHICH WOULD IMPROVE OUR ABILITY TO COPE WITH
CIVIL DEFENSE ASPECTS OF RADIATION SICKNESS.
RADIATION INJURY IS VIEWED AS ONLY ONE OF A NUMBER
OF NOXIOUS AGENTS WHICH MIGHT BE EXPECTED TO ACT
CUMULATIVELY OR SYNERGISTICALLY UNDER THE SHELTER
CONDITIONS POSTULATED. THE MEDICAL SIGNIFICANCE OF
PRE-EXISTING DISEASE AND DISABILITY IN THE SHELTER
POPULATION AND THE MEDICAL EFFECTS OF CONFINING LARGE
RANDOMLY SELECTED GROUPS OF PERSONS UNDER THE AUSTERE
CONDITIONS POSTULATED ARE EMPHASIZED THROUGHOUT.
MEASURES MOST LIKELY TO INFLUENCE ULTIMATE
RADIATION-RELATED MORTALITY INCLUDE MANAGEMENT OF
INFECTION AND OF HEMORRHAGIC MANIFESTATIONS OF
RADIATION INJURY, AND MANAGEMENT OF SURGICAL
PROBLEMS. PRESENTLY AVAILABLE CHEMICAL 'PROTECTIVE
AGENTS' ARE MENTIONED BUT THEIR EFFECTIVENESS IN
PREVENTING RADIATION MORTALITY IS CONSIDERED TO BE
DOUBTFUL UNDER SHELTER CONDITIONS POSTULATED.
SPACE AND WATER ARE THE MOST IMPORTANT REQUIREMENTS
FOR SURVIVAL UNDER SHELTER CONDITIONS, AND PRESENT
ALLOCATIONS SHOULD BE REVISED. RECOMMENDATIONS FOR
SPECIFIC RESEARCH ARE MADE BUT THESE RECOMMENDATIONS
WOULD BE SUBJECT TO REVISION, DEPENDING UPON THE
OUTCOME OF THE RECOMMENDATIONS WITH RESPECT TO
OPERATIONS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-656 159 15/3
STANFORD RESEARCH INST MENLO PARK CALIF
CONCEPTUAL DESIGN OF A CIVIL DEFENSE RESCUE SYSTEM
WITH A SUPPLEMENT ON COMMUNITY MANPOWER RESOURCES. (U)
DESCRIPTIVE NOTE: FINAL REPT. (PHASE 2),
AUG 67 138P GRAIN, JOHN L. ; THOMAS, LACY
G. ;
CONTRACT: N00228-66-C-0523
PROJ: SRI-5900
TASK: 25118
MONITOR: NRDL TRC-67-U1

UNCLASSIFIED REPORT

DESCRIPTORS: (*CIVIL DEFENSE SYSTEMS, *RESCUES),
MANPOWER STUDIES, LEADERSHIP, ORGANIZATIONS,
COMMAND + CONTROL SYSTEMS, NUCLEAR WARFARE,
EVACUATION, URBAN AREAS, TABLES (U)
IDENTIFIERS: POSTATTACK OPERATIONS (U)

CULMINATING SEVERAL YEARS OF RESEARCH ON THE
PROBLEM OF RESCUE AFTER NUCLEAR ATTACK, THIS STUDY
REVIEWS PAST WORK AND PRESENTS A PRELIMINARY DESIGN
OF A GENERAL RESCUE SYSTEM. IN THIS SYSTEM, THE
POPULATION WOULD BE DORMANT DURING THE NON-CRISIS
PERIOD, BUT WOULD BE AROUSED AT THE EARLIEST SIGN OF
A CRISIS, TO PREPARE FOR ATTACK AND TO CARRY OUT
POSTATTACK RESCUE OPERATIONS UNDER RECOGNIZED LOCAL
LEADERS. IN EACH URBAN AREA, THIS LEADERSHIP WOULD
BE PROVIDED BY A SMALL GROUP OR CADRE DRAWING UPON
NEIGHBORHOOD LEADERSHIP THROUGH AN INACTIVE RESERVE
OF CITIZEN ORGANIZATIONS. THE CADRE WOULD SUPPLY
THE CONTINUING READINESS IN PEACETIME UNDER THE
GUIDANCE OF THE OCD. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-658 744 15/3 5/1
STANFORD RESEARCH INST MENLO PARK CALIF
POSTATTACK RECOVERY MANAGEMENT: CONCEPTS AND
TECHNIQUES FOR MODEL DEVELOPMENT, (U)
MAR 67 101P CLARK, DONALD E. , JR.;
MILLER, CARL F. ;
PROJ: SRI-MU-5710

UNCLASSIFIED REPORT

DESCRIPTORS: (*CIVIL DEFENSE SYSTEMS,
*COUNTERMEASURES), (*NUCLEAR WARFARE,
RECOVERY), MANAGEMENT ENGINEERING, DECISION
MAKING, MODELS(SIMULATIONS), RADIOACTIVE
FALLOUT, SURVIVAL, NUCLEAR WEAPONS, VULNERABILITY,
FOOD, WATER SUPPLIES, INVENTORY, ECONOMICS (U)

A POSTATTACK RECOVERY MODEL SYSTEM IS DESCRIBED
UNDER THE FOUR GENERAL CATEGORIES OF WEAPON EFFECTS
AND VULNERABILITY, ECONOMIC SYSTEMS, COUNTERMEASURES,
AND CIVIL DEFENSE ORGANIZATION. SPECIFIC MODELS IN
EACH CATEGORY ARE LISTED, DISCUSSED BRIEFLY IN TERMS
OF INPUTS, INTERNAL COMPUTATIONAL PARAMETERS, AND
OUTPUTS. REFERENCES ARE GIVEN THAT DESCRIBE THE
CURRENT STATE OF DEVELOPMENT FOR EACH MODEL. A
GENERAL APPROACH TO MODEL DESIGN AND DEVELOPMENT IS
GIVEN, INCLUDING WATER AND BREAD SYSTEMS AS DETAILED
EXAMPLES. THE APPLICATION OF MODELS TO DEVELOP A
CIVIL DEFENSE ORGANIZATION TO MANAGE POSTATTACK
RECOVERY OPERATIONS IS DESCRIBED. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-659 981 15/6 18/3
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF
NUCLEAR WEAPON BURST PARAMETERS GOVERNING URBAN FIRE
VULNERABILITY. (U)
OCT 67 39P JONES, ROBERT E. ; MARTIN,
STANLEY B. ; RENNER, ROLF H. ;
REPT. NO. USNRDL-TR-67-113
PROJ: GCD-TO-65-200(8)

UNCLASSIFIED REPORT

DESCRIPTORS: (*NUCLEAR WEAPONS, *URBAN AREAS),
(*NUCLEAR EXPLOSIONS, URBAN AREAS), THERMAL
RADIATION, FIRES, BLAST, NUCLEAR EXPLOSION DAMAGE,
VULNERABILITY, CIVIL DEFENSE SYSTEMS (U)

THE WEAPON BURST PARAMETERS GOVERNING THERMAL
EFFECTS FROM NUCLEAR WEAPON EXPLOSIONS ARE REVIEWED
AS PART OF THE OCD PROGRAM FOR ASSESSING URBAN
VULNERABILITY TO FIRE FROM NUCLEAR BURSTS. THE
MOST IMPORTANT BURST PARAMETERS ARE WEAPON YIELD,
BURST HEIGHT, DISTANCE FROM TARGET, AND NUMBER OF
BURSTS. SPATIAL, TEMPORAL, AND SPECTRAL
CHARACTERISTICS OF FIREBALL DEVELOPMENT AND THERMAL
OUTPUT ARE DISCUSSED AS FUNCTIONS OF THESE
PARAMETERS. PEAK BLAST OVERPRESSURE AS A FUNCTION
OF YIELD, BURST ALTITUDE AND DISTANCE FROM GROUND
ZERO IS BRIEFLY DISCUSSED IN RELATION TO BLAST-CAUSED
SECONDARY IGNITIONS. THE MATERIAL PRESENTED WILL
BE USEFUL FOR APPROXIMATE CALCULATIONS OF WEAPON
EFFECTS IN ANALYSIS OF URBAN FIRE VULNERABILITY AND
OTHER PROBLEMS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-659 982 15/6 18/3
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF
APPLICATION OF FIRE FUNDAMENTALS TO MODELS OF
MACROSCALE PHENOMENA FROM NUCLEAR WEAPON BURSTS, (U)
JUL 67 63P MARTIN, STANLEY B. IRENNER,
WOLF H. JONES, ROBERT E. J
REPT. NO. USNRDL-TR-67-114

UNCLASSIFIED REPORT

DESCRIPTORS: (*NUCLEAR WEAPONS, *FIRES),
(*NUCLEAR EXPLOSIONS, URBAN AREAS),
MODELS(SIMULATIONS), BLAST, NUCLEAR EXPLOSION
DAMAGE, VULNERABILITY, CIVIL DEFENSE SYSTEMS (U)

THE APPLICATION OF FIRE FUNDAMENTALS TO MACROSCALE
FIRE PHENOMENA IS REVIEWED TO DATE AS PART OF THE
JCD PROGRAM FOR ASSESSING URBAN VULNERABILITY TO
FIRE CAUSED BY NUCLEAR-WEAPON BURSTS. SUFFICIENT
BACKGROUND INFORMATION IS PROVIDED FOR USE IN FUTURE
FIRE-DAMAGE-ASSESSMENT AND FIRE-PROTECTION
PROCEDURES. INCLUDED ARE THE CHARACTERISTICS OF
FIRES IN ENCLOSURES, CHARACTERISTICS OF FIRES IN THE
OPEN (BASIC PROCESSES, TECHNIQUES FOR ESTIMATING
FIRE SPREAD, AND ROLE IN FIRE-SPREAD MODELS) AND
THE INTERACTION (COALESCENCE) OF SMALL- AND
LARGE-SCALE, FREEBURNING FIRES. THE TECHNICAL
MATERIAL PRESENTED WILL BE USEFUL FOR DETERMINING THE
IMPORTANCE OF EACH PARAMETER GOVERNING MACROSCALE
FIRE PHENOMENA, THE SYNERGISTIC EFFECTS OF
INTERACTING PARAMETERS, AND WHAT ADDITIONAL
INFORMATION IS NEEDED ON THE SENSITIVE PARAMETERS AND
THEIR INTERRELATIONS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-661 249 18/8
MERRIMACK COLL NORTH ANDOVER MASS DIV OF ENGINEERING
EVALUATION OF FALLOUT CONTAMINATION FROM SURFACE
RUNOFF. (U)
DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. 20 JUN 66-10
JUN 67,
JUN 67 93P GRUNE, WERNER NO : ATLAS,
HENRY S. : RUIZ, EDWARD M. :
CONTRACT: N00228-66-C-1606
PROJ: A-300

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOACTIVE FALLOUT,
CONTAMINATION), (*RADIOACTIVITY, SOILS),
(*WATER, RADIOACTIVITY), COMPUTER PROGRAMS,
MATHEMATICAL MODELS, CIVIL DEFENSE SYSTEMS,
MATHEMATICAL PREDICTION, HYDROLOGY, FLUID FLOW,
SAFETY, MOISTURE, RADIOLOGICAL CONTAMINATION,
PUBLIC HEALTH, ANALYSIS (U)

THIS REPORT REPRESENTS THE INITIAL STAGES IN AN
INVESTIGATION OF FACTORS AFFECTING THE TRANSPORT OF
BIOLOGICALLY IMPORTANT RADIONUCLIDES INTO A RESERVOIR
BY SURFACE RUNOFF. THE PHENOMENA OF OVERLAND FLOW,
INFILTRATION, FALLOUT DEPOSITION AND ACTIVITY
TRANSPORT HAVE BEEN ANALYZED SEPARATELY AND
INDIVIDUAL FORMULATIONS FOR EACH HAVE BEEN DERIVED.
THESE ARE INCLUDED IN THE REPORT ALONG WITH
COMPUTER SOLUTIONS OF THE FIRST THREE. A GENERAL
SKETCH OF THE PROJECTED OVERALL MODEL IS CONTAINED IN
THE INTRODUCTION WITH A DISCUSSION OF THE AREAS
REMAINING TO BE INVESTIGATED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-661 310 13/9 13/12 15/3
STANFORD RESEARCH INST MENLO PARK CALIF
DEVELOPMENT OF RAPID SHUTDOWN TECHNIQUES FOR CRITICAL
INDUSTRIES: THE ALUMINUM INDUSTRY, (U)
MAY 67 50P TATE, JAMES H. IBILLHEIMER,
JOHN W. I
PROJ: 2321A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: CIVIL DEFENSE RESEARCH SERIES.
SEE ALSO AD-643 573.

DESCRIPTORS: (INDUSTRIAL PLANTS, SAFETY),
ANALYSIS, INDUSTRIES, ALUMINUM, REFINERIES,
NUCLEAR WARFARE, OPERATION, CIVIL DEFENSE SYSTEMS,
VULNERABILITY (U)

IN THE EVENT OF A NUCLEAR ATTACK, THE RAPID SHUTDOWN OF THE ALUMINUM INDUSTRY MAY BE NECESSARY TO SAVE AS MUCH OF THE INDUSTRY AS POSSIBLE AS WELL AS TO PROTECT ITS SKILLED EMPLOYEES OF THE INDUSTRY. DIFFERENT PROBLEMS EXIST IN VARIOUS SECTORS OF THE ALUMINUM INDUSTRY IN TERMS OF RAPID SHUTDOWN AND ITS CONSEQUENCES. THUS, EACH ELEMENT OF THE INDUSTRY MUST BE CONSIDERED SEPARATELY, WITH SPECIAL ATTENTION GIVEN TO THE ALUMINA REFINERY AND THE PRIMARY ALUMINUM SMELTER. THE ALUMINA REFINERY MAY BE SHUT DOWN QUICKLY BY SIMPLY CUTTING THE ELECTRICAL POWER. HOWEVER, ANY SHUTDOWN THAT IS CONDUCTED IN LESS THAN 48 HOURS WILL RESULT IN SOME PLANT DAMAGE THAT WILL NECESSITATE REPAIR BEFORE STARTUP. THE AMOUNT OF DAMAGE INCURRED WILL DEPEND ON THE AMOUNT OF TIME AVAILABLE FOR SHUTDOWN, AND, CONSEQUENTLY, WILL DETERMINE HOW LONG WILL BE REQUIRED FOR STARTUP. STARTUP TIMES MAY VARY FROM A FEW HOURS TO A FEW MONTHS DEPENDING ON THE EXTENT OF PLANT DAMAGE. IN AN ALUMINUM SMELTER, ANY PROLONGED SHUTDOWN WILL RESULT IN SOME EQUIPMENT DAMAGE NO MATTER HOW MUCH TIME IS AVAILABLE FOR SHUTDOWN. CONSEQUENTLY, THERE WILL BE SOME EQUIPMENT REPAIR NECESSARY BEFORE STARTUP. THE AMOUNT OF EQUIPMENT DAMAGE WILL VARY ACCORDING TO THE TIME AVAILABLE FOR SHUTDOWN, POT CONSTRUCTION, AND THE SHUTDOWN PROCEDURE USED BY THE SMELTER IN QUESTION. STARTUP TIME MAY ALSO VARY FROM A FEW DAYS TO SEVERAL WEEKS DEPENDING ON EQUIPMENT DAMAGE AND THE STARTUP PROCEDURE USED.
(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-661 336 15/3 5/9
HUMAN SCIENCES RESEARCH INC MCLEAN VA
METHODS AND TECHNIQUES FOR POSTATTACK MANPOWER
UTILIZATION. (U)
AUG 67 64P SNYDER, MONROE B. ; FARINA,
ALFRED J. ;
REPT. NO. HSR-RR-67/11-MN
CONTRACT: DAHC20-67-C-0102

UNCLASSIFIED REPORT

DESCRIPTORS: (•CIVIL DEFENSE PERSONNEL, PERSONNEL
MANAGEMENT), (•NUCLEAR WARFARE, SURVIVAL),
(•MANPOWER STUDIES, SURVIVAL), EFFECTIVENESS,
RECOVERY, RECRUITING, SELECTION, TRAINING,
DISTRIBUTION, MOTIVATION, PERSONNEL,
PERFORMANCE(HUMAN), CIVIL DEFENSE SYSTEMS,
MANAGEMENT PLANNING (U)
IDENTIFIERS: POSTATTACK OPERATIONS (U)

THE REPORT DEALS WITH THE TECHNIQUES AND METHODS
FOR EFFECTIVELY UTILIZING MANPOWER IN A POSTATTACK
SITUATION. THE TRADITIONAL MANPOWER OPERATIONS AND
THE FACTORS OPERATING ON THEM IN A POSTATTACK
SITUATION ARE REVIEWED. IT IS SHOWN HOW THE
DOMINANT RECOVERY EFFORT, THE CONSTRAINTS UPON
OPERATIONS, AND THE EMPHASIS PLACED UPON VARIOUS
CRITERIA WOULD CHANGE DURING THREE RECOVERY STAGES.
THE CONCLUSION IS REACHED THAT IN GENERAL, THE
POSTATTACK MANPOWER UNIT WILL BE OPERATING IN AN
ENVIRONMENT SO DIFFERENT FROM THE PRESENT THAT THE
PRESENT ORGANIZATION OF FUNCTIONS AND APPROACHES TO
MANPOWER UTILIZATION WILL PROBABLY BE INAPPROPRIATE
AND INADEQUATE TO HANDLE THE POSTATTACK PROBLEMS.
THUS, A NEW LOOK AT METHODS AND PROCEDURES FOR
UTILIZING MANPOWER IS CLEARLY WARRANTED. A NEW
APPROACH IS PRESENTED TO MANPOWER UTILIZATION WITH
IMPLICATIONS FOR PLANNING IN THE PREATTACK WORLD.
THE CONCEPT OF THE MANPOWER UTILIZATION
SUBSYSTEM (MUS) IS DEFINED. SCHEMATIC FLOW
CHARTS SHOW CHANGES IN EMPHASIS IN THE MUS FROM THE
NORMAL PREATTACK SITUATION THROUGH THE VARIOUS
POSTATTACK STAGES. THE USE OF THE MUS CONCEPT IN
RECOVERY SYSTEMS PLANNING AND IN ALTERNATIVE
APPROACHES TO MANPOWER PLANNING IS DISCUSSED.
(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-662 603 15/3 5/1
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
COMMAND AND CONTROL IMPLICATIONS OF THE CONCEPT OF
EMERGENCY OPERATIONS UNDER NUCLEAR ATTACK. (U)
DESCRIPTIVE NOTE: TECHNICAL MEMO.,
JUN 67 80P ABERSMAN, ALLEN I. ICUSACK,
BRUCE L. GIBBONS, ROGER D. HANEY, TERENCE
P. MODDY, LEE J. I
REPT. NO. TM-3679

UNCLASSIFIED REPORT

DESCRIPTORS: (CIVIL DEFENSE SYSTEMS, COMMAND +
CONTROL SYSTEMS), NUCLEAR WARFARE, URBAN AREAS,
ORGANIZATIONS, CIVIL DEFENSE PERSONNEL, FALLOUT
SHELTERS, MANAGEMENT ENGINEERING, FLOW CHARTING (U)

THE RESULTS OF A STUDY OF THE COMMAND AND CONTROL
IMPLICATIONS OF THE OCD CONCEPT OF EMERGENCY
OPERATIONS UNDER NUCLEAR ATTACK. THE
REPORT DELINEATES THE APPROACH, AND METHODOLOGY USED;
AND PRESENTS THE RESULTS OF TWO MAJOR EFFORTS. THE
FIRST, A STUDY OF THE COMMAND CONTROL AUTHORITIES,
RESPONSIBILITIES, FUNCTIONS AND ASSOCIATED
INFORMATION NEEDS; AND THE SECOND, AN ASSESSMENT OF
THE ROLE OF THE EMERGENCY OPERATING CENTER
UNDER THIS CONCEPT OF OPERATIONS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-663 469 15/3
URS CORP BURLINGAME CALIF
THE USEFULNESS OF EXPOSURE CONTROL COUNTERMEASURES IN
REDUCING RADIATION FATALITIES. (U)
DESCRIPTIVE NOTE: FINAL REPT..
JUN 67 117P FOGET, CARL R. ; WILLSON, ANN
; VAN HORN, WILLIAM H. ;
REPT. NO. URS-664-5
CONTRACT: N228(62479)703J7

UNCLASSIFIED REPORT

DESCRIPTORS: (•RADIOLOGICAL CONTAMINATION,
COUNTERMEASURES), FALLOUT SHELTERS, RADIOLOGICAL
DOSAGE, CIVIL DEFENSE SYSTEMS, SHIELDING,
DECONTAMINATION, EXPOSURE, MORTALITY RATES,
SENSITIVITY, DOSIMETERS, RADIOACTIVE FALLOUT (U)

AN INVESTIGATION WAS MADE OF THE LIFESAVING
POTENTIAL OF EXPOSURE CONTROL COUNTERMEASURES
(APPLIED SHIELDING, GROUP SHIELDING, SHELTER
ROTATION, LIMITED DECONTAMINATION, OVERCROWDING, AND
MOVEMENT) UNDER SPECIFIC RADIOLOGICAL ENVIRONMENTS.
SCENARIOS WERE DEVELOPED TO DEPICT 'REAL' POST-
ATTACK SITUATIONS WITH RADIOLOGICAL FALLOUT LEVELS
SUITABLE FOR EVALUATION OF EXPOSURE CONTROL
COUNTERMEASURES. AN ANALYSIS WAS PERFORMED OF THE
LIFESAVING CAPABILITIES OF EACH INDIVIDUAL
COUNTERMEASURE AND A COMBINATION OF VARIOUS
COUNTERMEASURES FOR EACH SHELTER LOCATION. THE
SENSITIVITY OF EACH COUNTERMEASURE TO INFORMATIONAL
INPUTS WAS ALSO STUDIED AS WAS THE USE OF THE
COUNTERMEASURES IN PROMOTING THE EARLY RESTORATION OF
VITAL FACILITIES. IT WAS CONCLUDED THAT THE
EXPOSURE CONTROL COUNTERMEASURES THAT WERE
INVESTIGATED ALL SHOW SOME DEGREE OF LIFESAVING
CAPABILITY. GROUP SHIELDING, OVERCROWDING, AND
APPLIED SHIELDING WERE FOUND TO BE THE MOST EFFECTIVE
COUNTERMEASURES. LIMITED DECONTAMINATION, SHELTER
ROTATION, AND REMEDIAL MOVEMENT PROVED TO BE THE
LEAST EFFECTIVE COUNTERMEASURES. IT WAS CONCLUDED
THAT EXPOSURE CONTROL COUNTERMEASURES, KNOWLEDGEABLY
USED EITHER SINGLY OR IN COMBINATION IN A HIGH
RADIATION FIELD ARE CAPABLE OF SAVING MANY LIVES THAT
WOULD OTHERWISE BE LOST. IT IS RECOMMENDED THAT
THE USE OF EXPOSURE CONTROL COUNTERMEASURES BE
INVESTIGATED FURTHER, PARTICULARLY IN THE APPLICATION
TO COMMUNITIES WHERE LARGE SHELTER DEFICITS ARE KNOWN
TO EXIST, SUCH AS THE SUBURBAN OR BEDROOM COMMUNITIES
THAT SURROUND MOST LARGE METROPOLITAN AREAS.
(AUTHOR)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AU-663 799 5/3 15/3 15/6
STANFORD RESEARCH INST MENLO PARK CALIF
GERMAN WARTIME INDUSTRIAL CONTROLS: AN ANALOGY TO
RECOVERY FROM NUCLEAR ATTACK. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
OCT 67 136P JACKSON, TERENCE G. , JRI
CONTRACT: OCD-PS-64-201
PROJ: SRI-4949-351

UNCLASSIFIED REPORT

DESCRIPTORS: (•INDUSTRIAL PRODUCTION, CONTROL),
(•NUCLEAR WARFARE, RECOVERY), HISTORY,
WARFARE, EAST GERMANY, WEST GERMANY,
COMMERCE, PERSONNEL MANAGEMENT, ECONOMICS, CIVIL
DEFENSE SYSTEMS, ARMAMENT, MANAGEMENT PLANNING (U)
IDENTIFIERS: POSTATTACK OPERATIONS, GERMANY (U)

THE RESEARCH DEVELOPED STRONG INFERENCES FROM
GERMAN WARTIME EXPERIENCE, WHICH BEAR ON THE
CONDUCT AND ORGANIZATION OF EARLY POSTATTACK
RECOVERY. THE ASSUMPTION THAT NATIONAL RECOVERY
COULD PROCEED ONLY WITH A CENTRALLY PLANNED AND
CONTROLLED ECONOMY SHOULD BE REEXAMINED THOROUGHLY;
E.G., IT MAY BE POSSIBLE TO PASS FROM FRAGMENTED
REGIONAL ECONOMIES DIRECTLY TO A NATIONAL MARKET
ECONOMY AS THE BONN REPUBLIC HAS DONE WITH
EVIDENT SUCCESS. DIRECT DAMAGE ASSESSMENT FOR
ECONOMIC RECOVERY WOULD HAVE TO BE CONDUCTED BY
INFORMED TECHNICAL-INDUSTRIAL PERSONNEL FROM PRIVATE
INDUSTRY, WORKING OUTWARD FROM THE INTACT AREAS INTO
THE ZONE OF RECOVERABLE ASSETS, WITH OR WITHOUT
CENTRAL DIRECTION. THE GERMAN EXPERIENCE
DEMONSTRATES THAT AN ADVANCED INDUSTRIAL-CAPITALIST
ECONOMY POSSESSES SIGNIFICANT RESERVES OF
PRODUCTIVITY. RECENT CHANGES IN THE U. S.
ECONOMIC STRUCTURE APPEAR TO PROMISE A DEGREE OF
AUTONOMOUS PRODUCTIVE CAPACITY FOR THE SURVIVING
FRAGMENTS, WHICH MUST BE THE BASIS OF RECOVERY.
GOOD DATA EXIST FOR SPECIFIC STUDIES OF GERMAN
WARTIME EXPERIENCE OF INTEREST TO CIVIL DEFENSE
PLANNING (E.G., CIVIL AND INDUSTRIAL RECONSTRUCTION
PROGRAMS AND CERTAIN ESSENTIAL RECOVERY OPERATIONS
AND TECHNIQUES, SUCH AS RUBBLE CLEARANCE, REFUGEE
ASSIMILATION, AND EMERGENCY PUBLIC FINANCE).
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-663 811 5/11 15/3 15/6
HUMAN SCIENCES RESEARCH INC MCLEAN VA
SOCIAL AND BEHAVIORAL FACTORS IN THE IMPLEMENTATION
OF LOCAL SURVIVAL AND RECOVERY ACTIVITIES. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
AUG 67 103P CHENAULT, WILLIAM W. ; ENGLER,
RICHARD E. ; NORDLIE, PETER G. ;
REPT. NO. HSR-RR-67/12-IP
CONTRACT: DAHC-20-67-C-0102

UNCLASSIFIED REPORT

DESCRIPTORS: (NUCLEAR WARFARE, RECOVERY), CIVIL
DEFENSE SYSTEMS, URBAN AREAS, SOCIOLOGY, SURVIVAL,
MAINTENANCE, ECONOMICS, LEADERSHIP, BEHAVIOR,
DISASTERS, MOTIVATION, ORGANIZATIONS, SURVIVAL,
ADJUSTMENT (PSYCHOLOGY) (U)
IDENTIFIERS: POSTATTACK OPERATIONS (U)

THE RECOVERY OF A NATIONALLY INTERDEPENDENT ECONOMY
WILL REQUIRE CERTAIN LOCALLY PERFORMED RECOVERY
ACTIVITIES. WHEREAS SURVIVORS WILL TEND TO DEFINE AS
MOST IMPORTANT OTHER ACTIVITIES THAT THEY PERCEIVE TO
BE MOST IMPORTANT FOR MEETING NEEDS DEFINED IN
NARROWER, COMMUNITY CONTEXTS. ESPECIALLY
SIGNIFICANT FOR PLANNING PURPOSES ARE THE DIFFERENT
PERSPECTIVES OF SURVIVORS IN COMMUNITIES EXPERIENCING
HEAVY DIRECT EFFECTS OF NUCLEAR WEAPONS, IN ADJACENT
COMMUNITIES EXPERIENCING LIGHTER DIRECT EFFECTS, AND
IN PERIPHERAL COMMUNITIES EXPERIENCING NEGLIGIBLE
DIRECT EFFECTS. IMPLEMENTATION POLICIES DESIGNED
TO MOTIVATE PARTICIPATION IN NATIONALLY ORIENTED
RECOVERY ACTIVITIES MUST TAKE ACCOUNT OF THE
MOTIVATIONAL AND ORGANIZATIONAL FACTORS OPERATING IN
DIFFERENT LOCAL CONTEXTS. ECONOMIC PLANNING MUST
TAKE ACCOUNT OF SOCIAL FACTORS IF RECOVERY PLANS ARE
IN FACT TO BE IMPLEMENTED. THE APPROPRIATE
APPROACH TO SUCH PLANNING IS THEREFORE A
SOCIOECONOMIC APPROACH; AND RESEARCH TO DATE
INDICATES FIVE ORIENTATIONS THAT SHOULD GUIDE SUCH
PLANNING: (1) THE NECESSITY OF MEETING THE
MAINTENANCE REQUIREMENTS OF SURVIVORS, (2) THE
USE OF THE FAMILY AND COMMUNITY AS BUILDING BLOCKS
FOR POSTATTACK SOCIOECONOMIC PLANNING, (3)
EMPHASIS ON THE PRIORITY OF LIGHTLY DAMAGED OR
UNDAMAGED AREAS IN POSTATTACK PLANNING FOR MASSIVE
DISASTER, (4) THE CLEAR-CUT ALLOCATION OF
RECOVERY FUNCTIONS AMONG DIFFERENT LEVELS OF
AUTHORITY, (5) THE NECESSITY OF SPECIFYING THE
TOTAL SET OF RECOVERY MANAGEMENT GOALS AND USING
THESE AS CRITERIA AGAINST WHICH TO EVALUATE PLANNING (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-664 178 15/3 5/4
TECHNICAL OPERATIONS INC ARLINGTON VA WASHINGTON RESEARCH
CENTER
SCENARIO-GAME MODEL FOR THE EXERCISE AND EVALUATION
OF NATIONAL LEVEL CIVIL DEFENSE SYSTEMS. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
NOV 67 103P HARDICK, W. L. IGUTHRIE, P.
G. HOBSON, V. W. , JR. MATHIAS, J. ;
REPT. NO. TOI-TR-67-4
CONTRACT: DAHC20-67-C-0160

UNCLASSIFIED REPORT

DESCRIPTORS: (•NATIONAL DEFENSE, CIVIL DEFENSE
SYSTEMS), (•CIVIL DEFENSE SYSTEMS,
MODELS(SIMULATIONS)), GAME THEORY, DECISION
MAKING, POLITICAL SCIENCE, MILITARY STRATEGY, COLD
WAR, NUCLEAR WARFARE, LEADERSHIP, DETERRENCE,
ARMS CONTROL, WARNING SYSTEMS, MANPOWER,
VULNERABILITY (U)
IDENTIFIERS: SCENARIOS (U)

THE MODEL WAS DEVELOPED IN RESPONSE TO A
REQUIREMENT ESTABLISHED BY THE OFFICE OF CIVIL
DEFENSE (OCD), DEPARTMENT OF THE ARMY. ITS
PURPOSE IS TO PROVIDE A GAMING ORGANIZATION AND
METHODOLOGY FOR EXERCISING AND EVALUATING CIVIL
DEFENSE SYSTEMS WITHIN THE CONTEXT OF REALISTIC AND
CREDIBLE CHANGES IN INTERNATIONAL TENSIONS AND CRISES
BUILDUPS. SINCE THE GAME MODEL IS DESIGNED FOR
A BROAD SCOPE OF OCD TEST REQUIREMENTS AT THE
NATIONAL LEVEL, ITS FEATURES BUILT-IN FLEXIBILITY,
THE EMPLOYMENT OF AGGREGATION TECHNIQUES, BROADLY
CONTROLLED FREE PLAY, AND RELIANCE ON THE INTUITIVE
JUDGMENT OF GAME PARTICIPANTS. (AUTHOR) (U)

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-664 523 13/12
STANFORD RESEARCH INST MENLO PARK CALIF
WORLD WAR II GERMAN FIRE DOCUMENT TRANSLATIONS. (U)
JUL 67 107P MILLER, CARL F. ;
CONTRACT: N00028-66-C-0317
PROJ: SRI-MU-5865
MONITOR: USNRDL TRC-67-41

UNCLASSIFIED REPORT

DESCRIPTORS: (•FIRES, WESTERN EUROPE), (•FIRE
BOMBS, DAMAGE ASSESSMENT), EAST GERMANY, WEST
GERMANY, HISTORY, TACTICAL WARFARE, DAMAGE,
FIRE SAFETY, URBAN AREAS, VULNERABILITY,
FIREFIGHTING VEHICLES, STRUCTURES, FIRE RESISTANT
MATERIALS, AREA BOMBING, CIVIL DEFENSE SYSTEMS,
DEBRIS (U)
IDENTIFIERS: TRANSLATIONS, GERMANY, WORLD WAR
II (U)

THE REPORT DESCRIBES THE GENERAL CONTENT OF SEVERAL
WORLD WAR II GERMAN DOCUMENTS ON WAR-CAUSED
FIRES. MAJOR EMPHASIS WAS GIVEN TO THE TRANSLATION
OF REPORTS OF THE HAMBURG POLICE PRESIDENT AND THE
HAMBURG FIRE DEPARTMENT ACTION REPORTS. THE
TRANSLATED VERSION OF AN EVALUATED REPORT WRITTEN BY
HANS RUMPF, COLONEL OF THE GERMAN FIRE
PROTECTION POLICE, ON THE FIRES RESULTING FROM THE
GERMAN ATTACK ON ROTTERDAM ON MAY 14, 1949, IS
APPENDED TO ILLUSTRATE POINTS OF PRACTICAL
INFORMATION IN REGARD TO FIRE PROTECTION METHODS,
FIRE DAMAGE, BEHAVIOR OF PEOPLE IN FIRE SITUATIONS,
AND OTHER FACTORS RELATING TO THE SPREAD OF FIRE
(E.G., METHODS OF CONSTRUCTION). (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-665 307 15/6 13/1 10/2
URS CORP BURLINGAME CALIF
REPAIR AND RECLAMATION OF GAS AND ELECTRIC UTILITY
SYSTEMS. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
JUL 67 140P VAN HORN, WILLIAM H. ; BOYD,
GAIL B. ; FOGET, CARL R. ;
REPT. NO. URS-669-6

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH
STANFORD RESEARCH INST., PROJ. OCD-PS-64-201,
AND OFFICE OF CIVIL DEFENSE.

DESCRIPTORS: (*POWER SUPPLIES, MAINTENANCE),
(*NUCLEAR EXPLOSION DAMAGE, POWER SUPPLIES),
GASES, FUELS, RECLAMATION, URBAN AREAS, DAMAGE
ASSESSMENT, CIVIL DEFENSE SYSTEMS, MATHEMATICAL
MODELS, DAMAGE ASSESSMENT, DESIGN, MANPOWER
STUDIES, VULNERABILITY, SPARE PARTS, PRESSURE,
CONSTRUCTION, SCHEDULING (U)
IDENTIFIERS: OVERPRESSURE, *PUBLIC UTILITIES,
GAS UTILITIES (U)

THE STUDY WAS DIRECTED TOWARD IDENTIFYING THE
ESSENTIAL SUBSYSTEMS AND COMPONENTS OF METROPOLITAN
GAS AND ELECTRIC UTILITY SYSTEMS, DETERMINING THEIR
FUNCTIONAL RELATIONSHIPS, ESTIMATING THE DAMAGE TO
CRITICAL ELEMENTS FROM VARIOUS NUCLEAR WEAPONS
EFFECTS, AND ESTIMATING THE REPAIR REQUIREMENTS FOR
RESTORING DAMAGED SYSTEMS. A MATHEMATICAL REPAIR
MODEL WAS DEVELOPED AND APPLIED TO 'TYPICAL' CITY,
AND FROM THE RESULTS OF THE STUDY, TIME REPAIR EFFORT
INCLUDING MANPOWER BY SKILLS, WAS DERIVED. THE
MAJOR FINDINGS OF THE REPORT ARE: (1) BEING
LOCATED PRIMARILY BELOW GROUND AND COMPRISED OF
ELEMENTS HAVING GREAT STRUCTURAL STRENGTH,
METROPOLITAN GAS UTILITY SYSTEMS TEND TO BE MUCH LESS
VULNERABLE TO WEAPON DAMAGE THAN ELECTRIC UTILITY
SYSTEMS. FURTHER, GAS SYSTEM INSTALLATIONS ARE
GENERALLY LESS COMPLEX IN DESIGN AND FUNCTION AND,
THEREFORE, IMPOSE SMALLER AND LESS STRINGENT REPAIR
REQUIREMENTS IN TERMS OF MANPOWER, SKILLS, EQUIPMENT,
SPARE PARTS, AND MATERIALS. (2) THE LEVEL OF
DAMAGE, EXPRESSED AS OVERPRESSURE (AND RELATED
WEAPON EFFECTS) CAN BE RELATED TO REPAIR EFFORT BY
AN EXPERIMENTAL FUNCTION. THIS MATHEMATICAL REPAIR
MODEL CAN BE USED TO PREDICT REPAIR REQUIREMENTS
(INCLUDING MEN AND MATERIALS UNDER VARIOUS ASSUMED
ATTACK CONDITIONS) FOR REAL UTILITIES AND REAL
CITIES. (AUTHOR)

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UNCLASSIFIED

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-665 367 15/3 15/6
OPERATIONS RESEARCH INC SILVER SPRING MD
LOGISTICS OF DEBRIS CLEARANCE AND REMOVAL. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
AUG 67 267P BEEK, CHARLES R. ; MINTZ,
RAYMOND D. ; BUTTIMER, JAMES ; BARRY, GORDON ;
LEININGER, WILLIAM ;
REPT. NO. TR-420
PROJ: 3300
TASK: 3320

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH
STANFORD RESEARCH INST., MENLO PARK, CALIF.

DESCRIPTORS: (•NUCLEAR EXPLOSION DAMAGE, DEBRIS),
(•CIVIL DEFENSE SYSTEMS, DEBRIS), REMOVAL,
NUCLEAR WARFARE, RECOVERY, LOGISTICS, MANAGEMENT
PLANNING, URBAN AREAS, CIVIL DEFENSE PERSONNEL,
SCHEDULING, DAMAGE ASSESSMENT, CONTROL SYSTEMS,
EFFECTIVENESS, MAINTENANCE, VEHICLES (U)
IDENTIFIERS: POSTATTACK OPERATIONS (U)

THE DEBRIS CONDITIONS ANTICIPATED FOLLOWING A
NUCLEAR ATTACK WILL BE A MAJOR DETERRENT TO
POSTATTACK RECOVERY OPERATIONS. THE OVERALL
OBJECTIVE OF THIS STUDY IS TO DEVELOP DATA AND
GUIDANCE IN FOUR SPECIFIC STUDY AREAS. THE FIRST
AREA IDENTIFIES AND PLACES IN SEQUENCE THE
SIGNIFICANT LOCAL ACTIVITIES THAT MUST BE COMPLETED
DURING THE PEACETIME PERIOD TO DEVELOP AN EFFECTIVE
DEBRIS CLEARANCE AND REMOVAL PROGRAM. THE SECOND
STUDY AREA DETERMINES THE MANAGEMENT ACTIONS REQUIRED
IN PLANNING, SCHEDULING, AND CONTROLLING POSTATTACK
DEBRIS OPERATIONS, AND EVALUATES VARIOUS TECHNIQUES
AND DEVICES THAT MAY BE EMPLOYED BY THE LOCAL MANAGER
TO CARRY OUT THESE ACTIONS. THE THIRD AREA
ANALYZES THE CAPABILITIES AND LIMITATIONS OF
EQUIPMENT USED FOR DIRECT PERFORMANCE OF DEBRIS
CLEARANCE AND REMOVAL OR FOR LOGISTICS SUPPORT.
SPECIFICATIONS AND CRITERIA ARE DEVELOPED TO PERMIT
THE IDENTIFICATION OF APPROPRIATE AND AVAILABLE
RESOURCES, THE DETERMINATION OF NECESSARY LOGISTIC
SUPPORT NEEDS, AND THE EVALUATION OF POTENTIAL DEBRIS
CLEARING CAPACITIES. THE FINAL STUDY AREA DEVELOPS
BASIC CONCEPTS FOR RESOURCE ALLOCATION MODELS
DESIGNED TO SHOW THE EFFECTIVENESS OF EFFORTS
EXPENDED IN DEBRIS CLEARANCE AND REMOVAL RELATED TO
THE AVAILABLE RESOURCES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-665 499 15/3 15/6 14/1
URS CORP BURLINGAME CALIF
CONCEPTUAL DEVELOPMENT OF AN ANALYTICAL SYSTEM FOR
EVALUATING ALTERNATIVE CIVIL DEFENSE
COUNTERMEASURES.
DESCRIPTIVE NOTE: FINAL REPT.,
JUN 67 64P HAWKINS, MYRON B. ;
REPT. NO. URS-667-4
CONTRACT: OCD-OS-64-201

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (CIVIL DEFENSE SYSTEMS,
COUNTERMEASURES), COST EFFECTIVENESS, NUCLEAR
WARFARE CASUALTIES, NUCLEAR EXPLOSION DAMAGE, URBAN
AREAS, PREDICTIONS, KILL PROBABILITIES,
POPULATION, COMPUTER PROGRAMS, THERMAL RADIATION,
SURVIVAL, AIRBURST, RADIATION HAZARDS,
RADIOACTIVE FALLOUT, FIRES, DISEASES,
STARVATION, RADIATION INJURIES

(U)

THE CONCEPT OF A SYSTEM FOR EVALUATING THE COST-
EFFECTIVENESS OF CIVIL DEFENSE COUNTERMEASURES IS
FORMULATED. EFFECTIVENESS WILL BE DETERMINED BY
COMPARING THE NUMBER OF CASUALTIES RESULTING FROM A
BASE-LINE 'NO-COUNTER-MEASURE' PREDICTION TO THOSE
OCCURRING WHEN THE USE OF VARIOUS COUNTERMEASURES IS
ASSUMED. THE COST OF THE COUNTERMEASURE WILL BE
DERIVED IN A SEPARATE COMPUTATION. THE PREDICTION
OF CASUALTIES RESULTING FROM THE USE OF A
COUNTERMEASURE IN A SINGLE URBAN AREA WOULD BE
DERIVED BY SUMMING THE CASUALTIES PREDICTED FOR A
LARGE NUMBER OF SUBAREAS OR CELLS, EACH PERHAPS 1
KILOMETER SQUARE. PHYSICAL DESCRIPTIONS OF EACH
CELL MUST INCLUDE THOSE CHARACTERISTICS OF THE AREA
THAT AFFECT THE NUMBER OF CASUALTIES AND THAT ARE
MODIFIED BY ANY COUNTERMEASURE SUBJECT TO TEST.
THE PREDICTION PROGRAM SUCCESSIVELY SUBJECTS EACH
POPULATION GROUP TO THE ENVIRONMENTS OR HAZARDS IN
THE SAME ORDER THEY WILL OCCUR, AND TABULATES AFTER
EACH HAZARD THE NUMBER OF KILLED, INJURED, AND
UNHURT. THE CENSUS OF SURVIVORS AFTER EACH HAZARD
BECOMES THE INPUT POPULATION FOR THE NEXT RISK.
THE PROGRAM USES THREE MAJOR PHASES OR TIME
PERIOD: THE IMMEDIATE-EFFECTS PERIOD (THERMAL
RADIATION AND AIR BLAST HAZARDS); THE EARLY-EFFECTS
PERIOD (FIRE AND FALLOUT RADIATION HAZARDS); AND
THE POST-EMERGENCY PERIOD (DISEASE, STARVATION
RECOVERY FROM INJURIES AND OTHER EFFECTS).
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-666 692 15/6
STANFORD RESEARCH INST MENLO PARK CALIF
INFORMATION NEEDS FOR POSTATTACK RECOVERY MANAGEMENT,
(U)
APR 68 10SP DRESCH, FRANCIS W. I
CONTRACT: DAHC20-67-C-0116
PROJ: SRI-MU-6294

UNCLASSIFIED REPORT

DESCRIPTORS: (NUCLEAR WARFARE, RECOVERY),
MANAGEMENT PLANNING, DECISION MAKING,
COMMUNICATION SYSTEMS, MANAGEMENT CONTROL SYSTEMS,
LEADERSHIP, ORGANIZATIONS, ECONOMICS, CIVIL
DEFENSE SYSTEMS, COSTS (U)
IDENTIFIERS: POSTATTACK OPERATIONS (U)

THE STUDY IS CONCERNED PRIMARILY WITH INFORMATION
NEEDED FOR MONITORING THE EFFECTS OF ACTIONS TAKEN BY
GOVERNMENTAL BODIES AT FEDERAL, STATE, AND LOCAL
LEVELS IN A POSTULATED POSTATTACK PERIOD AND FOR
PROVIDING BUSINESS MANAGEMENT WITH THE OVERALL
INFORMATION IT NEEDS FOR MAKING BUSINESS DECISIONS IN
THE ABSENCE OF UNDISTORTED INDICATORS OF ECONOMIC
DEVELOPMENTS. THE BREAK IN TRADITIONAL ECONOMIC
TIME SERIES AND THE NEED FOR DRASTIC REORIENTATION OF
INDUSTRIAL EFFORTS IN THE POSTATTACK PERIOD WOULD
GREATLY RESTRICT THE AMOUNT OF INFORMATION AVAILABLE
AND EXPAND THE AMOUNT NEEDED. THE IMPOSITION OF
CONTROLS; THE NEED FOR WELL-DIRECTED INVESTMENT BY
GOVERNMENT, BUSINESS, AND PRIVATE INDIVIDUALS; AND
THE DOMINATING ECONOMIC SIGNIFICANCE OF GOVERNMENT
PUBLIC WORKS EXPENDITURES FOR PROJECTS IN THE GENERAL
INTEREST WOULD ALL COMPLICATE THE DECISION PROCESS.
THESE FACTORS WOULD ALL BE HIGHLY RELEVANT TO
INFORMATION REQUIREMENTS FOR POLICY DETERMINATION AND
FOR DAY-TO-DAY OPERATIONS IN THE FIRST SEVERAL MONTHS
OF THE POSTATTACK PERIOD. INFORMATION REQUIREMENTS
HAVE THUS BEEN STUDIED WITH SUCH FACTORS IN MIND AND
IN THE LIGHT OF AVAILABLE INFORMATION ON PLANS FOR
EMERGENCY AGENCIES SUCH AS ODR (OFFICE OF DEFENSE
RESOURCES); DES (OFFICE OF ECONOMIC
STABILIZATION); AND OTHER RELEVANT GOVERNMENT
AGENCIES AT FEDERAL, STATE, AND LOCAL LEVELS.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-668 938 15/3 15/6
STANFORD RESEARCH INST MENLO PARK CALIF
A STATISTICAL INFORMATION SYSTEM FOR ESTIMATING THE
MAGNITUDE AND SCOPE OF NUCLEAR ATTACKS. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
FLB 68 97P RODDEN, ROBERT M. ; THOMPSON,
CHARLES R. ; MIERCORT, FREDERIC A. I
PROJ: SRI-4949-680
MONITOR: OCD 4615A

UNCLASSIFIED REPORT

DESCRIPTORS: (*CIVIL DEFENSE SYSTEMS, *DATA
PROCESSING SYSTEMS), (*NUCLEAR WARFARE, *DAMAGE
ASSESSMENT), STATISTICAL ANALYSIS, NUCLEAR
EXPLOSION DAMAGE, SURVIVAL, POPULATION, DECISION
MAKING, APPROXIMATION (MATHEMATICS), REAL TIME,
SAMPLING, FLOW CHARTING, ACCURACY, PATTERN
RECOGNITION, LEAST SQUARES METHOD (U)

THIS RESEARCH DEVELOPS CONCEPTS, FLOW DIAGRAMS, AND
STATISTICAL METHODOLOGY FOR AN INFORMATION SYSTEM TO
ESTIMATE THE MAGNITUDE AND SCOPE OF NUCLEAR ATTACKS.
THE SYSTEM IS DESIGNED TO OPERATE IN THE
TRANSATTACK AND IMMEDIATE POSTATTACK PERIODS WHEN
DATA ON THE ATTACK CAN BE EXPECTED TO BE INCOMPLETE
AND INACCURATE. THE UNDERLYING PRINCIPLE IN
ESTIMATING ATTACK SIZE IS THAT OF STATISTICAL
INFERENCE, WHICH PERMITS AN ESTIMATE TO BE MADE OF
THE TOTAL ATTACK FROM INFORMATION ON A SAMPLE OF THE
ATTACK ONLY. HEURISTIC DECISION RULES ARE APPLIED
AS NEEDED TO MAKE THE SYSTEM OPERABLE. IT IS
DEMONSTRATED HOW THE TARGET SYNTHESIS PROCEDURE THUS
DEVELOPED MAY BE COUPLED TO A VARIETY OF SURVIVAL
ESTIMATING TECHNIQUES TO YIELD SURVIVAL ESTIMATES.
THE RESEARCH ALSO DEVELOPS STATISTICAL METHODOLOGY
FOR PROCESSING REPORTS OF NUCLEAR DETONATIONS.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-669 623 15/3 15/6
HUDSON INST INC HARMON-ON-HUDSON N. Y
EMERGENCY MOBILIZATION FOR POSTATTACK
REORGANIZATION. (U)
DESCRIPTIVE NOTE: FINAL REPT.:
MAY 68 66P BROWN, WILLIAM M. :
REPT. NO. HI-874/2-RR
MONITOR: UCD 3922A

UNCLASSIFIED REPORT

DESCRIPTORS: (CIVIL DEFENSE SYSTEMS,
MOBILIZATION), (NUCLEAR WARFARE, RECOVERY),
COUNTERMEASURES, COSTS, EARLY WARNING SYSTEMS,
ADVANCED PLANNING, NUCLEAR WARFARE CASUALTIES,
SURVIVAL, REACTION (PSYCHOLOGY), FOOD, STOCK
LEVEL CONTROL, INDUSTRIES, TRANSPORTATION,
VULNERABILITY, HISTORY, DISASTERS (U)
IDENTIFIERS: POSTATTACK OPERATIONS (U)

THE REPORT EMPHASIZES THE DANGERS TO EVENTUAL
RECONSTRUCTION THAT ARE POSED BY THE DISORGANIZATION
INEVITABLY FOLLOWING A NUCLEAR WAR. WHAT CAN GO
WRONG IN THIS REORGANIZATION PERIOD IS EXAMINED BY
THE USE OF SCENARIOS AND ANALOGY. IT IS THEN
SUGGESTED THAT DURING THE CRISIS PERIOD PRECEDING A
NUCLEAR WAR A NUMBER OF USEFUL ACTIONS ENHANCING THE
CHANCE OF POSTATTACK RECOVERY SHOULD BE UNDERTAKEN AS
PART OF AN EMERGENCY MOBILIZATION FOR CIVIL DEFENSE.
THIS MOBILIZATION MIGHT INSTIGATE ACTIONS WHICH
WOULD HELP U.S. SOCIETY TO NEGOTIATE THE
REORGANIZATION PERIOD SUCCESSFULLY. THE PROBLEMS
OF CREATING SUCH COUNTERMEASURES APPEAR TO BE
FORMIDABLE BUT POSSIBLE IF: (A) THE USABLE
WARNING PROVIDED BY THE CRISIS IS OF SUFFICIENT
DURATION (SEVERAL WEEKS OR MORE); AND (B) THE
PRE-PLANNING FOR THE MOBILIZATION ACTION IS COMPLETED
IN ADVANCE OF THE NEED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-670 829 15/6
RAND CORP SANTA MONICA CALIF
ON REORGANIZING AFTER NUCLEAR ATTACK,
JAN 68 26P BROWN, WILLIAM M. ;
REPT. NO. P-3764

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (•NUCLEAR WARFARE, RECOVERY), CIVIL
DEFENSE SYSTEMS, COST EFFECTIVENESS, SURVIVAL,
VULNERABILITY, PREDICTIONS, MANAGEMENT PLANNING,
POPULATION, REACTION(PSYCHOLOGY), BEHAVIOR,
ECONOMICS, STARVATION

(U)

IDENTIFIERS: POSTATTACK OPERATIONS

(U)

EVEN THOUGH A MAJOR FRACTION OF THE PHYSICAL
RESOURCES SURVIVE A NUCLEAR ATTACK, THE ECONOMIC
VIABILITY OF THE COUNTRY IS NOT ASSURED. FOR WANT
OF AN EFFECTIVE UNDERSTANDING OF THE NEEDS OF THE
POSTATTACK REORGANIZATION PERIOD, THE COUNTRY COULD
EXPERIENCE ECONOMIC STARVATION IN THE MIDST OF
PLENTY. THE PURPOSE OF PREPLANNING FOR A CIVIL
DEFENSE MOBILIZATION IS TO ENABLE IT TO PROCEED
RAPIDLY AND EFFECTIVELY AT THE TIME IT IS NEEDED.
THUS, IF THE PREPARATIONS ARE SATISFACTORY THE
EFFORTS WHICH WOULD PROMOTE THE SUBSEQUENT POSTATTACK
RECOVERY COULD REASONABLY BE BALANCED AND THEREBY NOT
ONLY MAKE THE RECOVERY MORE LIKELY BUT MORE RAPID.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-671 821 6/6 15/3
RESEARCH TRIANGLE INST DURHAM N C OPERATIONS RESEARCH AND
ECONOMICS DIV
VECTORBORNE DISEASE AND CONTROL. (U)
DESCRIPTIVE NOTE: FINAL REPT. OCT 66-SEP 67.
JUN 68 139P JOHNSON, T. ; JOHNSTON, D. R.

REPT. NO. RTI-R-OU-303
CONTRACT: N00228-67-C-0689
PROJ: RTI-OL-3C3
MONITOR: USNRDL TRC-67-43

UNCLASSIFIED REPORT

DESCRIPTORS: (*INFECTIOUS DISEASES, CONTROL),
(*VIRUS DISEASES, CONTROL), (*PEST CONTROL,
REVIEWS), DISEASE VECTORS, ARBOVIRUSES,
PASTEURRELLA PESTIS, RICKETTSIA, RABIES VIRUS,
RODENTS, CULICIDAE, LICE, PARASITES,
PESTICIDES, HAZARDS, TOXICITY, VACCINES,
CHEMOTHERAPY, COST EFFECTIVENESS, CIVIL DEFENSE
SYSTEMS, ECOLOGY (U)
IDENTIFIERS: POSTATTACK OPERATIONS (U)

THE STUDY DEVELOPS QUANTITATIVE ESTIMATES OF THE
POTENTIAL POSTATTACK THREAT FROM VECTORBORNE
DISEASES. THE DISEASES CHOSEN FOR ANALYSIS ON THE
BASIS OF PREVIOUS ESTIMATES OF IMPORTANCE ARE PLAGUE,
EPIDEMIC TYPHUS, MURINE TYPHUS, MOSQUITO BORNE
ENCEPHALITIS, AND RABIES. THE ANALYSIS IS BASED ON
A SET OF EXPLICIT ASSUMPTIONS ABOUT POSTATTACK
MEDICAL SERVICES AND COMMAND-AND-CONTROL IN THE
ABSENCE OF SPECIFIC PLANS TO COMBAT VECTORBORNE
DISEASES. THE REGIONAL DISTRIBUTION OF RISK IS
CONSIDERED. IT IS CONCLUDED THAT IN THE ABSENCE OF
SPECIFIC PREATTACK PREPARATIONS, THE BEST ESTIMATE IS
THAT 2 PERCENT OF THE SURVIVORS MAY CONTRACT ONE OF
THESE DISEASES AND 0.75 PERCENT OF THE SURVIVORS MAY
DIE FROM ONE OF THESE DISEASES. PLAGUE IN THE
WESTERN STATES MIGHT BE EXPECTED TO ACCOUNT FOR ONE-
HALF OF THE CASES AND TWO-THIRDS OF THE DEATHS FROM
VECTORBORNE DISEASES. THUS VECTORBORNE DISEASES
ARE A POTENTIAL POSTATTACK PROBLEM, BUT ARE LESS OF A
POTENTIAL HAZARD THAN THE ENTERIC OR THE MAN-TO-MAN
DISEASE GROUPS. METHODS OF CONTROL OF RODENTS,
RODENT ECTOPARASITES, LICE, AND MOSQUITOES ARE
REVIEWED. NORMAL INVENTORIES OF PESTICIDES ARE
ESTIMATED TO BE ADEQUATE IN QUANTITY AND DISTRIBUTION
TO SUPPORT POSTATTACK VECTOR CONTROL OPERATIONS.
DISSEMINATION OF INFORMATION IN THE POSTATTACK
PERIOD IS JUDGED TO BE OF PRIME IMPORTANCE. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-672 770 15/3 15/6 5/11
OFFICE OF CIVIL DEFENSE WASHINGTON D C
PROCEEDINGS OF THE SYMPOSIUM ON POSTATTACK RECOVERY
FROM NUCLEAR WAR, HELD AT FORT MONROE, VIRGINIA,
NOVEMBER 6-9, 1967. (U)
67 410P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SPONSORED BY THE NATIONAL ACADEMY
OF SCIENCES, NATIONAL RESEARCH COUNCIL,
WASHINGTON, D.C.

DESCRIPTORS: (•NUCLEAR WARFARE, RECOVERY),
RADIOLOGICAL CONTAMINATION, FOOD, RADIOACTIVE
FALLOUT, DOSE RATE, ECONOMICS,
MODELS(SIMULATIONS), RADIATION HAZARDS, PUBLIC
HEALTH, SOCIOLOGY, NUCLEAR WARFARE CASUALTIES,
SURVIVAL, VULNERABILITY, CIVIL DEFENSE SYSTEMS,
SYMPOSIA (U)
IDENTIFIERS: •POSTATTACK OPERATIONS (U)

CONTENTS: SUSTENANCE; HEALTH; SPECIAL
TOPICS OF LONG-RANGE BIOLOGICAL AND ECOLOGICAL
EFFECTS; PROSPECTS FOR ECONOMIC RECOVERY;
ECONOMICS; AND SOCIETAL VULNERABILITIES. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-673 703 18/3 13/12 15/6
RAND CORP SANTA MONICA CALIF
PROBLEMS OF FIRE IN NUCLEAR WARFARE, (U)
AUG 61 34P HILL, JERALD E. ;
REPT. NO. P-2414

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED TO THE MILITARY
OPERATIONS SUBCOMMITTEE OF THE COMMITTEE ON
GOVERNMENT OPERATIONS OF THE HOUSE OF
REPRESENTATIVES, 87TH CONGRESS, 8 AUG 61.

DESCRIPTORS: (*NUCLEAR WARFARE, *FIRES),
(*DAMAGE ASSESSMENT, MATHEMATICAL PREDICTION),
NUCLEAR EXPLOSION DAMAGE, URBAN AREAS, RURAL
AREAS, FOREST FIRES, HISTORY, DATA, TERRAIN,
METEOROLOGICAL PARAMETERS, THERMAL RADIATION,
CIVIL DEFENSE SYSTEMS, WATER SUPPLIES, CHEMICALS,
MEDICAL SUPPLIES, RADIATION MONITORS, SHELTERS,
FIRE SAFETY, DAMAGE CONTROL (U)
IDENTIFIERS: FIREBALL(NUCLEAR BURST), FIRE
STORMS (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-674 121 15/6 13/12

URS CORP BURLINGAME CALIF

FIRE-SERVICE CAPABILITIES FOR DAMAGE CONTROL AND RESCUE.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

MAR 66 148P

MARTIN, S. B. ; STAACKMANN,

M. ; RAMSTAD, R. W. ;

REPT. NO. URS-673-3

CONTRACT: N00228-67-C-0694

MONITOR: USNRDL

TRC-66-8

UNCLASSIFIED REPORT

DESCRIPTORS: (CIVIL DEFENSE SYSTEMS, URBAN AREAS), (NUCLEAR EXPLOSION DAMAGE, FIRES), (FIRE SAFETY, NUCLEAR EXPLOSIONS), BLAST, MATHEMATICAL MODELS, RADIOACTIVE FALLOUT, FALLOUT SHELTERS, EXPOSURE, FIRE EXTINGUISHERS, INTENSITY, BUILDINGS, FIREFIGHTING VEHICLES, DAMAGE, INTERACTIONS, TRAINING, DEGRADATION, MORTALITY RATES, RESCUES, PERFORMANCE(HUMAN), SURVIVAL

(U)

IDENTIFIERS: GRAPHS(CHARTS), POST ATTACK OPERATIONS

(U)

THIS STUDY EXAMINES THE CAPABILITIES FOR FIRE-CONTROL AND RESCUE ACTIVITIES BY THE FIRE SERVICES FOLLOWING NUCLEAR ATTACK ON URBAN AREAS. THE SUBJECTS TREATED INCLUDE: (1) FEASIBILITY OF VARIOUS STRATEGIES AND TACTICS; (2) GUIDELINES FOR TACTICAL DECISIONS FOR LIMITED-INFORMATION CASES; (3) RESOURCE AND MANPOWER REQUIREMENTS FOR TYPICAL OPERATIONS; (4) RATIONALE FOR ALLOCATION OF SERVICES TO DEMANDS; AND (5) BASIC CONCEPTS OF A METHOD FOR EVALUATING PERFORMANCE. THE RESEARCH REPORTED ACCOMPLISHED THE FOLLOWING: (1) DEVELOPMENT OF ANALYTICAL METHODS AND PRELIMINARY PERFORMANCE MODELS; AND (2) STUDIES OF SPECIFIC CASES TO TEST THE ANALYTICAL METHODS AND TO PROVIDE A PRELIMINARY EVALUATION OF SOME OPERATIONAL CONCEPTS. A FOLLOW-ON STUDY IS RECOMMENDED TO BRING THE RESEARCH TO A CONCLUSIVE STAGE. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-674 652 15/3 15/6
STANFORD RESEARCH INST MENLO PARK CALIF
INDUSTRIAL RECOVERY ASSESSMENT TECHNIQUES. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
FEB 68 67P LEE, HONG ;
PROJ: SRI-MU-4949-350

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SUPPORTED IN PART BY OFFICE OF
CIVIL DEFENSE, WASHINGTON, D.C.

DESCRIPTORS: (•NUCLEAR EXPLOSION DAMAGE, URBAN
AREAS), (•URBAN PLANNING, CIVIL DEFENSE
SYSTEMS), NUCLEAR WARFARE, AIRBURST, RECOVERY,
MODELS(SIMULATIONS), ECONOMICS, INDUSTRIES,
TRANSPORTATION, ROADS, STRUCTURES,
DECONTAMINATION, ADVANCED PLANNING, RADIATION
DAMAGE, RADIOLOGICAL DOSAGE, DEBRIS, MANPOWER
STUDIES (U)
IDENTIFIERS: •POSTATTACK OPERATIONS (U)

THE REPORT OUTLINES A POSTATTACK RECOVERY MODEL
SYSTEM FOR RECOVERY ASSESSMENT AND RECOVERY PLANNING.
A MAJOR COMPONENT IN THE MODEL SYSTEM IS THE
RECOVERY OPERATIONS MODEL. THESE MODELS
CONSIST OF THE DAMAGE REPAIR MODEL, THE
DEBRIS CLEARANCE MODEL, AND THE
DECONTAMINATION AND DOSE CONTROL MODEL.
THE MOST COMPLETE SET OF AVAILABLE INPUT DATA IS
THAT FOR DECONTAMINATION AND DOSE CONTROL
MODEL. PRELIMINARY FINDINGS REGARDING THE
DEBRIS CLEARANCE MODEL, RELATING DEBRIS
PRODUCTION TO DEBRIS CLEARANCE EFFORTS AND RATES WERE
PRESENTED. ALSO, AS A FIRST STEP IN DAMAGE REPAIR
MODELING, THE RELATIVE SIZE OF THE AREAS OF HEAVY
DAMAGE, INTERMEDIATE DAMAGE, AND LIGHT DAMAGE WERE
ESTIMATED. THE LIGHT DAMAGE AREA IS GENERALLY
EXPECTED TO BE VERY LARGE WHEN COMPARED WITH THE
AREAS OF GREATER DAMAGE AND GENERALLY CONSTITUTES THE
AREA WHERE SHORT TERM REPAIR WILL BE FEASIBLE. A
RECOMMENDATION WAS THEREFORE MADE THAT EMPHASIS BE
PLACED ON OBTAINING DEFINITIVE DATA IN THE LIGHT
DAMAGE AREA FOR THE CONSTRUCTION OF A DAMAGE REPAIR
MODEL. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-676 115 15/3 5/3
RESEARCH ANALYSIS CORP MCLEAN VA
A MODEL OF TECHNOLOGICAL CAPACITY TO SUPPORT
SURVIVORS OF NUCLEAR ATTACK.
DESCRIPTIVE NOTE: TECHNICAL PAPER,
SEP 68 75P SOBIN, BERNARD ;
REPT. NO. RAC-TP-313
CONTRACT: DAHC20-67-C-0137

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (CIVIL DEFENSE SYSTEMS,
INDUSTRIES), (NUCLEAR WARFARE, CIVIL DEFENSE
SYSTEMS), MATHEMATICAL MODELS, LINEAR PROGRAMMING,
FOOD, PRODUCTION, CONSUMPTION, POPULATION,
SURVIVAL, AGRICULTURE, ECONOMICS, TRANSPORTATION
IDENTIFIERS: ECONOMIC MODELS

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(U)

THE PAPER PRESENTS A LINEAR PROGRAMMING MODEL OF
PRODUCTION ACTIVITIES OF THE US ECONOMY AFTER
NUCLEAR ATTACK. THE MODEL HAS MANY ALTERNATIVE
COMBINATIONS OF AGRICULTURAL PRODUCTION FOR MEETING
SPECIFIC NUTRITIVE ELEMENT REQUIREMENTS OF THE
POPULATION AND ONE PRODUCTION PROCESS FOR EACH
NONAGRICULTURAL OUTPUT. THE PROCESSES FOR
NONAGRICULTURAL OUTPUT ARE THOSE OF THE 1958
INTERINDUSTRY MODEL OF THE US OFFICE OF
BUSINESS ECONOMICS; THE AGRICULTURAL ACTIVITIES
DRAW ON MANY OTHER SOURCES OF DATA. ROWS OF THE
MODEL GENERALLY STATE THAT THE CUMULATIVE PRODUCT OF
VARIABLES AND THEIR COEFFICIENTS MUST BE LESS THAN OR
EQUAL TO EITHER ZERO OR SOME STIPULATED CAPACITY.
IN THE FORMER CASE THE TYPICAL ROW STATES THAT
INPUTS REQUIRED MINUS PRODUCTION OF THE ITEM MUST NOT
BE GREATER THAN ZERO. IN THE LATTER CASE THE
REQUIREMENTS REFER TO CAPACITIES, WHICH CANNOT BE
PRODUCED IN A STATIC MODEL, AND TOTAL REQUIREMENTS
MUST NOT EXCEED THE STIPULATED CAPACITY REMAINING
AFTER THE NUCLEAR ATTACK. (AUTHOR)

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-676 153 15/3 18/8
ARMY NUCLEAR DEFENSE LAB EDGEWOOD ARSENAL MD
EFFECTS OF VEHICULAR OPERATION ON CONTAMINATED SLUSHY
ROADS. (U)
DESCRIPTIVE NOTE: TECHNICAL MEMO.,
JUL 68 29P MALONEY, JOSEPH C. ;
REPT. NO. NDL-TM-45

UNCLASSIFIED REPORT

DESCRIPTORS: (•ROADS, RADIOACTIVE FALLOUT),
(•RADIOACTIVE FALLOUT, COUNTERMEASURES),
DECONTAMINATION, VEHICLES, SNOW, CIVIL DEFENSE
SYSTEMS, DOSE RATE, EFFECTIVENESS, EXPERIMENTAL
DATA (U)
IDENTIFIERS: SLUSH (U)

THE OBJECTIVE OF THIS PROJECT WAS TO DEVELOP AND
TEST RADIOLOGICAL COUNTERMEASURES THAT ARE APPLICABLE
TO POST-NUCLEAR-ATTACK RECOVERY OPERATIONS. THE
SPECIFIC OBJECTIVE OF THIS PHASE OF THE PROJECT WAS
TO DETERMINE THE EFFECTS OF VEHICULAR TRAFFIC ON
DISPLACING FALLOUT ON BARE ROADS AND ON PACKED-SNOW-
COVERED ROADS. THE BUILDUP OF ACTIVITY ON VEHICLE
SURFACES, AND THE VARIATION OF SUBSEQUENT ROADWAY
DECONTAMINATION EFFECTIVENESS ALONG THE PATH OF
DECONTAMINATION EFFORT. DUE TO WEATHER CONDITIONS
THAT DEVELOPED AT THE TIME OF BOTH TESTS, THE ROADS
WERE COVERED WITH SLUSH. FOR VEHICULAR TRAFFIC
OVER A RADIOACTIVELY CONTAMINATED SLUSHY ROAD AND
SUBSEQUENT ROADWAY DECONTAMINATION, THE FOLLOWING
CONCLUSIONS WERE ESTABLISHED: (1) EXPOSURE
RATES TO OPERATING PERSONNEL OF VEHICLES WERE
SIGNIFICANTLY INCREASED DUE TO VEHICULAR
CONTAMINATION. (2) VEHICLES REQUIRED
DECONTAMINATION FOLLOWING OPERATION. (3) THE
DECONTAMINATION EFFORTS CONDUCTED ON SLUSHY ROADS
WERE MUCH LESS EFFECTIVE THAN THOSE CONDUCTED DURING
WARM OR COLD DRY WEATHER. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-476 187 6/18 15/3 8/6
STANFORD RESEARCH INST MENLO PARK CALIF
POSTATTACK FOOD PRODUCTION AND FOOD AND WATER
CONTAMINATION.

DESCRIPTIVE NOTE: FINAL REPT.,
JUN 68 112P BROWN, STEPHEN L. ; LEE, HONG
; YU, OLIVER S. ;

(U)

CONTRACT: DAMC20-67-C-D116
PROJ: SRI-MU-6250-050

UNCLASSIFIED REPORT

DESCRIPTORS: (•NUCLEAR WARFARE, RADIATION
EFFECTS), (•CIVIL DEFENSE SYSTEMS, AGRICULTURE),
PRODUCTION, RADIOACTIVE FALLOUT, FOOD, DAMAGE
ASSESSMENT, WATER SUPPLIES, SURVIVAL, RADIOLOGICAL
DOSAGE, CONSUMPTION, RADIATION TOLERANCE,
RADIATION SICKNESS, STATISTICAL ANALYSIS,
VULNERABILITY, ANIMALS
IDENTIFIERS: DASTAP (DAMAGE ASSESSMENT TAPE),
DAMAGE ASSESSMENT TAPE PROGRAM, •POSTATTACK
OPERATIONS

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(U)

FOOD PRODUCTION IS VULNERABLE TO NUCLEAR ATTACK
THROUGH BETA AND GAMMA RADIATION EFFECTS ON FOOD AND
FEED CROPS. DENIAL OF CROP ACREAGE TO FARMERS BY
FALLOUT RADIATION FIELDS, AND GAMMA RADIATION EFFECTS
ON LIVESTOCK. IN ADDITION, FALLOUT CONTAMINATES
FOOD CROPS AND WATER SUPPLIES, LEADING TO INTERNAL
HUMAN DOSES FROM INGESTED RADIONUCLIDES. FOR THE
ATTACKS POSTULATED, CROP AND LIVESTOCK SURVIVAL WAS
SUFFICIENT TO PRODUCE FOOD FOR THE SURVIVING
POPULATION, ASSUMING DISTRIBUTION WAS SATISFACTORY.
SERIOUS EFFECTS FROM INTERNAL DOSES WOULD BE
EXPECTED IN ONLY A SMALL FRACTION OF THE POPULATION.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-676 973 15/3
RAND CORP SANTA MONICA CALIF
ACTIVE AND PASSIVE DEFENSE, (U)
AUG 68 14P LATTER, A. L. ; MARTINELLI,
E. A. ;
REPT. NO. P-3165-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REVISION OF REPORT DATED AUG 65,
P-3165, AD-625 692.

DESCRIPTORS: (DEFENSE SYSTEMS, CORRELATION
TECHNIQUES), PASSIVE DEFENSE, NATIONAL DEFENSE,
ANTIMISSILE DEFENSE SYSTEMS, ANTIAIRCRAFT DEFENSE
SYSTEMS, CIVIL DEFENSE SYSTEMS, SHELTERS, GUIDED
MISSILE DEFENSE SYSTEMS, TERMINAL DEFENSE, URBAN
AREAS, RURAL AREAS

IDENTIFIERS: COMPARATIVE TECHNIQUES, NIKE-ZEUS,
NIKE-X (U)

THIS REPORT DEALS PRIMARILY WITH BLAST SHELTERS,
WHICH ARE A PASSIVE FORM OF DEFENSE. HOWEVER,
PASSIVE DEFENSE CANNOT BE DISCUSSED MEANINGFULLY
WITHOUT UNDERSTANDING THE RELATIONSHIP TO ACTIVE
DEFENSE, I.E., INTERCEPTING AND DESTROYING THE
ATTACKING BOMBERS AND BALLISTIC MISSILES. BOTH
ACTIVE AND PASSIVE DEFENSE HAVE THE SAME PURPOSE--TO
SAVE LIVES AND THE TOOLS NECESSARY FOR RECOVERY.
THE STUDY WILL DESCRIBE THE TECHNICAL ASPECTS OF
ACTIVE DEFENSE, PARTICULARLY BALLISTIC MISSILE
DEFENSE, THEN DISCUSS THE DIFFICULT QUESTION:
WHICH IS MORE EFFECTIVE, ACTIVE OR PASSIVE DEFENSE--
OR SOME COMBINATION OF THE TWO. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-678 499 15/6 6/7 15/3 5/2
MITRE CORP BEDFORD MASS
A CONTEXT STUDY OF POSTATTACK RESEARCH. VOLUME
IV. RESEARCH REVIEW.
DESCRIPTIVE NOTE: FINAL REPT. MAR 67-FEB 68,
FEB 68 150P KARLSON, JUNE ;
REPT. NO. M68-17-VOL-4
CONTRACT: DAHC20-67-C-0163

(U)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME I, AD-678 496.

DESCRIPTORS: (•NUCLEAR WARFARE, SURVIVAL),
REVIEWS, CIVIL DEFENSE SYSTEMS, RESEARCH PROGRAM
ADMINISTRATION, DOCUMENTATION, IDENTIFICATION,
COLLECTING METHODS, PROBLEM SOLVING, FEASIBILITY
STUDIES, BIBLIOGRAPHIES, ADVANCED PLANNING, URBAN
AREAS, RURAL AREAS, CLASSIFICATION, DAMAGE
ASSESSMENT, BUDGETS, PUBLIC HEALTH, MEDICINE
IDENTIFIERS: POSTATTACK RESEARCH, OBJECTIVES

(U)

(U)

THIS DOCUMENT CONTAINS AN APPROACH TO POSTATTACK
RESEARCH REVIEW. FORMATTED ABSTRACTS AND
COMPARATIVE REVIEWS FOR EACH RESEARCH TOPIC AREA ARE
RECOMMENDED. AND EXAMPLES OF BOTH ARE PRESENTED.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-678 598 15/3 18/8 5/2
DIKEADOD CORP ALBUQUERQUE N MEX
SPECIFICATION OF THE RADIOLOGICAL INFORMATION
REQUIREMENTS OF THE CIVIL DEFENSE SYSTEM. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
SEP 68 184P LOMMASSON, THOMAS E. ;
KIRKPATRICK, RONALD G. ; HORAN, JAMES J. ;
REPT. NO. DC-FR-1061
CONTRACT: NOD228-67-C-2277
MONITOR: USNRDL TNC-68-31

UNCLASSIFIED REPORT

DESCRIPTORS: (CIVIL DEFENSE SYSTEMS, INFORMATION
RETRIEVAL), (RADIOACTIVE FALLOUT, DATA PROCESSING
SYSTEMS), NUCLEAR EXPLOSIONS, RADIATION MONITORS,
PREDICTIONS, WIND, RAIN, SURVIVAL, RADIATION
INJURIES, MORTALITY RATES, RADIOLOGICAL DOSAGE,
PROGRAMMING (COMPUTERS), SPECIFICATIONS (U)
IDENTIFIERS: EMERGENCY OPERATIONS, RADIOLOGICAL
INFORMATION SYSTEMS, POST-ATTACK PERIOD (U)

THE TYPES, ACCURACIES, RANGES, AND QUANTITY OF
RADIOLOGICAL INFORMATION REQUIRED AT VARIOUS LEVELS
OF THE CIVIL DEFENSE ORGANIZATION AND THE RADEF
INFORMATION INTERCHANGE AMONG LEVELS THOUGHT TO BE
REQUIRED ARE SPECIFIED. THE BASIC FORM OF A
RADEF SYSTEM TO MINIMIZE LOSS OF LIFE AND/OR
MITIGATE RADIATION INJURIES AT THE LOCAL LEVEL IS
SUGGESTED. THE INFORMATION REQUIRED IS DEPENDENT
UPON THE ACTION OPTIONS OPEN TO A LOCAL GROUP PLACED
AT HAZARD FROM FALLOUT (AND OTHER PRIMARY AND
SECONDARY WEAPON EFFECTS) AND THEIR CHOICE OF THE
OPTION THEY BELIEVE TO PRESENT THE LEAST HAZARD.
THE EXISTENCE OF ADEQUATE COMMUNICATIONS WITH
HIGHER LEVELS OF THE CIVIL DEFENSE ORGANIZATION
RAISES THE LIKELIHOOD OF THEIR CORRECTLY CHOOSING THE
LEAST HAZARDOUS ACTION OPTION. THE RADEF SYSTEM
SUGGESTED MAY BE USED EFFECTIVELY IN A WIDE SPECTRUM
OF ATTACK AND HAZARD STATE SITUATIONS TO MITIGATE
LOSS OF LIFE AND SEVERITY OF INJURIES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-679 902 13/12 18/3
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF
AN EXPERIMENTAL TEST OF MASS FIRE SCALING
PRINCIPLES.
JUL 68 44P PARKER, WILLIAM J. ; CORLETT,
R. C. ; LEE, BILLY T. ;
REPT. NO. USNNDL-TR-68-117

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (•NUCLEAR EXPLOSIONS, FIRES),
(•CIVIL DEFENSE SYSTEMS, FIRES), STATISTICAL
ANALYSIS, EXPLOSION EFFECTS, THERMAL RADIATION,
WIND, GASES, AIR, VELOCITY, TEMPERATURE,
MODELS(SIMULATIONS)
IDENTIFIERS: MASS FIRES

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THE LARGE FIRES WHICH FOLLOW NUCLEAR DETONATIONS
OVER A CITY PRESENT AN IMPORTANT CIVIL DEFENSE
PROBLEM. THE HIGH TEMPERATURE, HIGH WINDS, HIGH
THERMAL RADIATION FLUX, AND HIGH NOXIOUS GAS
CONCENTRATIONS AT STREET LEVEL PRESENT AN ADVERSE
ENVIRONMENT FOR THE ESCAPE OF PEOPLE, FOR FIGHTING
FIRE, AND FOR THE OPERATION OF SHELTERS. IT IS
ESSENTIAL THAT CIVIL DEFENSE PLANNING BE BASED ON AS
RELIABLE A KNOWLEDGE OF THIS ENVIRONMENT AS POSSIBLE.
SINCE THE LOCAL CONDITIONS WILL BE INFLUENCED BY
THE ENTIRE MASS FIRE, IT IS NECESSARY TO DETERMINE
THE CHARACTERISTICS OF MASS FIRES. THE PURPOSE OF
THIS RESEARCH WAS TO FIND OUT IF THE AIR VELOCITIES
AND TEMPERATURES THAT EXIST IN THE GROSS FLOW FIELD
ABOVE A MASS FIRE COULD BE DETERMINED FROM
MEASUREMENTS MADE ON A SMALL SCALE LABORATORY-SIZED
MODEL OF THE MASS FIRE, USING ELECTRICAL HEATING
ELEMENTS TO PROVIDE THE HEAT INPUT. (AUTHOR)

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UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-680 459 15/3

STANFORD RESEARCH INST MENLO PARK CALIF
APPENDIXES 1 THROUGH 7 TO THE HAMBURG POLICE
PRESIDENT'S REPORT ON THE LARGE SCALE AIR ATTACKS
ON HAMBURG, GERMANY, IN WORLD WAR II, (U)

DEC 68 266P MILLER, CARL F. ;

CONTRACT: N00228-67-C-1519

PROJ: SRI-MU-6464

MONITOR: USNRUL TRC-68-47

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: APPENDIX TO AD-672 497.

DESCRIPTORS: (AIR FORCE OPERATIONS, DAMAGE
ASSESSMENT), (CIVIL DEFENSE SYSTEMS, INSTRUCTION
MANUALS), BOMBING, STATISTICAL DATA, SHELTERS,
PROTECTION, HAZARDS, FIRE SAFETY, DOCUMENTATION,
WATER SUPPLIES, FOOD, HOUSING, EPIDEMIOLOGY,
CASUALTIES, PUBLIC HEALTH, POLICE (U)
IDENTIFIERS: GERMANY(BEFORE PARTITION), (U)
HAMBURG(GERMANY), WORLD WAR 2

THE DOCUMENT PRESENTS INFORMATION ON AIR ATTACKS
AND ON CIVIL DEFENSE PREPARATIONS AND ACCOMPLISHMENTS
IN THE CITY OF HAMBURG, GERMANY, UP TO THE TIME
OF THE LARGE SCALE ATTACKS THAT BEGAN ON JULY 25,
1943. A MAP SUMMARY OF BOMBED SITES; NUMERICAL AND
GRAPHICAL SUMMARIES OF THE AIR ATTACKS; A MAP OF
SECURITY POLICE GROUPS, SECTORS, AND PRECINCTS; AND A
DIAGRAM OF THE ORGANIZATION AND STRUCTURE OF THE
SECURITY POLICE ARE PRESENTED. THE BULK OF THE
DOCUMENT CONSISTS OF A CHRONOLOGY OF POLICE
BULLETINS, PAMPHLETS, ORDERS, AND ORGANIZATION PLANS
FOR EMERGENCY SERVICE SITUATIONS. A CIVIL DEFENSE
SYSTEM WAS DEVELOPED IN RESPONSE TO PRECONCEIVED AND
OBSERVED EFFECTS, FROM THE COVERING OF WINDOWS TO THE
PREPARATION OF SHELTER ROOMS, TO POISON GAS
PROTECTION, TO BLAST PROTECTION, TO SHELTER
HABITABILITY, AND FINALLY, TO THE RECOGNITION OF FIRE
AS THE MAJOR HAZARD TO BE FACED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-681 075 15/3 15/7
STANFORD RESEARCH INST MENLO PARK CALIF
THE HAMBURG POLICE PRESIDENT'S REPORT ON THE LARGE
SCALE AIR ATTACKS ON HAMBURG, GERMANY, IN WORLD
WAR II. APPENDIXES 8 THROUGH 19, (U)
DEC 68 424P MILLER, CARL F. ;
CONTRACT: N00228-67-C-1519
PROJ: SRI-MU-6464
MONITOR: USNRDL TRC-68-46

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: APPENDIXES TO AD-672 497; SEE ALSO
APPENDIXES 1-7, AD-680 459.

DESCRIPTORS: (AIR FORCE OPERATIONS, DAMAGE
ASSESSMENT), (CIVIL DEFENSE SYSTEMS, REPORTS),
POLICE, NEWSPAPERS, SHELTERS, SURVIVAL,
RESCUES, CIVILIAN PERSONNEL, MORTALITY RATES,
FIRES, MAPS, ORGANIZATIONS, PERIODICALS,
EPIDEMIOLOGY (U)
IDENTIFIERS: GERMANY(BEFORE PARTITION),
HAMBURG(GERMANY) (U)

THIS DOCUMENT PRESENTS INFORMATION ON ATTACKS AND
ON CIVIL DEFENSE ACTIVITIES IN THE CITY OF HAMBURG,
GERMANY, DURING AND AFTER THE LARGE SCALE ATTACKS
THAT STARTED ON JULY 25, 1943. MANY EYEWITNESS
REPORTS OF EVENTS DURING THE AIR ATTACKS FROM JULY
25 TO AUGUST 3, 1943 ARE QUOTED. NUMEROUS
ILLUSTRATIONS SHOW ATTACK DAMAGE SUSTAINED BY THE
CITY AS WELL AS CIVIL DEFENSE ACTIVITIES INITIATED TO
COUNTER THE EFFECTS OF THE ATTACK. A COLLECTION OF
POLICE BULLETINS AND NEWSPAPER ARTICLES FROM THE
PERIOD JULY TO DECEMBER, 1943, DOCUMENT THE
RESTORATION OF THE CIVIL DEFENSE FORCES AND THE
IMPLEMENTATION OF POLICE SECURITY MEASURES TO PREVENT
LOOTING AND DISEASE EPIDEMICS, TO IDENTIFY MISSING
PERSONS, AND TO RESTORE PUBLIC UTILITIES TO THE CITY.
EXPERT MEDICAL OPINION IS PRESENTED ON THE DANGERS
OF EPIDEMICS CAUSED BY CORPSES AND ON THE CAUSES OF
DEATH FROM THE ATTACKS AS REVEALED BY AUTOPSY
FINDINGS. A DESCRIPTIVE AND PROFUSELY ILLUSTRATED
SECTION GIVES DETAILED INFORMATION ON THE PERFORMANCE
AND USE OF AIR RAID SHELTERS. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-681 252 6/5 15/3 6/9
RESEARCH TRIANGLE INST DURHAM N C OPERATIONS RESEARCH AND
ECONOMICS DIV
NATIONAL EMERGENCY HEALTH PREPAREDNESS STUDY
INCLUDING THE DEVELOPMENT AND TESTING OF A TOTAL
EMERGENCY HEALTH CARE SYSTEM MODEL. (U)
DESCRIPTIVE NOTE: FINAL REPT. MAY 67-AUG 68,
NOV 68 241P HILL, EDWARD L.; VOORS,
ANTONIE W.; LYDAY, RUSSELL O., JR.; PYECHA,
JOHN N.; HALLAN, JEROME B.;
REPT. NO. RTI-P-OU-332
CONTRACT: PH-11U-67

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO SUMMARY DATED NOV 68,
AD-681 253.

DESCRIPTORS: (*CIVIL DEFENSE SYSTEMS, PUBLIC
HEALTH), (*PUBLIC HEALTH, MATHEMATICAL MODELS),
NUCLEAR WARFARE, SURVIVAL, EMPLOYMENT, MEDICAL
PERSONNEL, HOSPITALS, MEDICAL SUPPLIES, NUCLEAR
WARFARE CASUALTIES, COMMUNICABLE DISEASES, RADIATION
EFFECTS, PROGRAMMING (COMPUTERS), SIMULATION (U)
IDENTIFIERS: FORTRAN-2 PROGRAMMING LANGUAGE,
*NUCLEAR POSTATTACK PERIODS, *EMERGENCY MEDICAL
CARE, COMPUTERIZED SIMULATION (U)

THE STUDY DEVELOPED A TOTAL EMERGENCY HEALTH
CARE SYSTEM MODEL THAT CAN BE USED TO STUDY
POSTATTACK PROBLEMS IN MEDICAL PREPAREDNESS PLANNING
FOR A SINGLE LOCALITY. THE TOTAL MODEL CONSISTS OF
TWO SUBMODELS AND IS CAPABLE OF ANALYZING MEDICAL
SYSTEM EFFECTIVENESS, MEASURED BY SURVIVORS, AS A
FUNCTION OF MEDICAL RESOURCES AND THEIR EMPLOYMENT;
E.G., TRIAGE, AND TREATMENT PRIORITIES. THE
IMMEDIATE EFFECTS SUBMODEL ANALYZES THE FIRST
60 DAYS IMMEDIATELY AFTER ATTACK AND IS APPLICABLE TO
THOSE CASUALTIES THAT SURVIVE THE INITIAL WEAPON
EFFECTS. THE DISEASE AND CHRONIC CONDITIONS
SUBMODEL IS DESIGNED TO MODEL THE GENERATION AND
EFFECTS OF LIKELY DISEASE THREATS TO SURVIVORS OF THE
60 DAY POSTATTACK PERIOD THROUGHOUT THE ENSUING YEAR.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-681 253 6/5 15/3 6/9
RESEARCH TRIANGLE INST DURHAM N C OPERATIONS RESEARCH AND
ECONOMICS DIV
NATIONAL EMERGENCY HEALTH PREPAREDNESS STUDY
INCLUDING THE DEVELOPMENT AND TESTING OF A TOTAL
EMERGENCY HEALTH CARE SYSTEM MODEL. SUMMARY, (U)
NOV 68 14P HILL, EDWARD L. ; VOORS,
ANTONIE W. ; LYDAY, RUSSELL O. ; JR. ; PYECHA,
JOHN N. ; HALLAN, JEROME B. ;
REPT. NO. RTI-R-OU-332-SUMMARY
CONTRACT: PH-110-67

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SUMMARY OF FINAL REPT., AD-681
252.

DESCRIPTORS: (*CIVIL DEFENSE SYSTEMS, PUBLIC
HEALTH), (*PUBLIC HEALTH, MATHEMATICAL MODELS),
NUCLEAR WARFARE, SURVIVAL, EMPLOYMENT, MEDICAL
PERSONNEL, HOSPITALS, MEDICAL SUPPLIES, NUCLEAR
WARFARE CASUALTIES, COMMUNICABLE DISEASES, RADIATION
EFFECTS, PROGRAMMING (COMPUTERS), SIMULATION (U)
IDENTIFIERS: FORTRAN 2 PROGRAMMING LANGUAGE,
*NUCLEAR POSTATTACK PERIODS, *EMERGENCY MEDICAL
CARE, COMPUTERIZED SIMULATION (U)

THE RESEARCH, CONDUCTED FOR THE PUBLIC HEALTH
SERVICE WAS DIRECTED TOWARD THE DEVELOPMENT OF A
TOTAL EMERGENCY HEALTH CARE SYSTEM MODEL
THAT CAN BE USED TO STUDY AND EVALUATE THE NUCLEAR
POSTATTACK HEALTH POSTURE OF A SINGLE LOCALITY.
THIS TOTAL MODEL CONSISTS OF TWO SUBMODELS AND CAN
BE USED IN MEDICAL PREPAREDNESS PLANNING FOR A SINGLE
LOCALITY: I.E., A TOWN, CITY, OR COUNTY. IT IS
CAPABLE OF ANALYZING MEDICAL SYSTEM EFFECTIVENESS, IN
TERMS OF SURVIVORS ADDED AS A FUNCTION OF THE
AVAILABILITY AND EMPLOYMENT (TRIAGE AND TREATMENT
PRIORITIES) OF MEDICAL RESOURCES (FACILITIES,
PERSONNEL AND SUPPLIES). THE FIRST SUBMODEL, THE
IMMEDIATE EFFECTS SUBMODEL, SIMULATES THE FIRST
60 DAYS IMMEDIATELY AFTER THE ATTACK AND IS CONCERNED
WITH THE HANDLING OF CASUALTIES THAT SURVIVE THE
INITIAL WEAPON EFFECTS. THE SECOND SUBMODEL OF THE
TOTAL EMERGENCY MEDICAL CARE SYSTEM MODEL
IS THE DISEASE AND CHRONIC CONDITIONS
SUBMODEL AND PROVIDES A SIMULATED STUDY OF THE
PROBABLE GENERATION AND EFFECT OF COMMUNICABLE
DISEASES AMONG THE SURVIVORS FROM 30 DAYS TO ONE YEAR
POSTATTACK. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-682 074 15/6 15/3
NATIONAL PLANNING ASSOCIATION WASHINGTON D C ECONOMIC
PROGRAMMING CENTER
STUDIES FOR AN ECONOMIC MODEL FOR SURVIVAL AND
RECOVERY OF A SINGLE CITY. VOLUME 1. RESOURCE
AVAILABILITY AND DATA: DAMAGE ASSESSMENT AND
ESTIMATION OF REPAIR REQUIREMENTS. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
JUN 68 113P NORTON, JOHN D. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2. AD-682 075.

DESCRIPTORS: (•NUCLEAR WARFARE, URBAN AREAS),
(•URBAN AREAS, RECOVERY),
MODELS(SIMULATIONS), CIVIL DEFENSE SYSTEMS,
ECONOMICS, SURVIVAL, DAMAGE ASSESSMENT, NUCLEAR
EXPLOSION DAMAGE, STATISTICAL ANALYSIS, THREAT
EVALUATION, VULNERABILITY, RADIOACTIVE FALLOUT,
NUCLEAR WARFARE CASUALTIES, DATA STORAGE SYSTEMS (U)

THE STUDY EXAMINES (1) PROCEDURES FOR
ESTIMATING RESOURCE AVAILABILITIES FOLLOWING
HYPOTHETICAL NUCLEAR ATTACKS; (2) NRAC RESOURCE
DATA FILES, LOCAL GOVERNMENT DATA BANKS, COMMERCIAL
INTELLIGENCE, AND THE PROPOSED NATIONAL WEALTH
INVENTORY; (3) FACTORS REQUIRED FOR
IMPLEMENTATION OF SUCH ESTIMATION PROCEDURES; AND
(4) DISCLOSURE RULES WHICH LIMIT ACCESS TO
AVAILABLE DATA, AND MEANS OF BY-PASSING THEM OR
OTHERWISE EVADING THIS DIFFICULTY. A SUPPLEMENT TO
THE READY-PARP PROCEDURE FOR (1) IS OUTLINED.
IT IS RECOMMENDED (A) THAT THE DESIRED MODEL BE
DIVIDED INTO A DAMAGE ASSESSMENT AND REPAIR
REQUIREMENTS SUBMODEL AND A RESOURCE ALLOCATION
SUBMODEL; (B) THAT DETAILED NEW INVESTMENT
FACTORS BE UTILIZED FOR THE FIRST SUBMODEL TO PROVIDE
REALISM CONSONANT WITH ACTUAL PROBLEMS OF RESOURCE
MANAGEMENT IN A SINGLE CITY POST-ATTACK; (C) THAT
OCD JOIN OTHER AGENCIES IN SUPPORTING DEVELOPMENT
IN AT LEAST ONE CITY OF A DATA BASE ADEQUATE FOR THE
PURPOSE; (D) THAT OCD ALSO JOIN IN FOSTERING
DEVELOPMENT OF A NATIONAL WEALTH INVENTORY AS AN
INTEGRAL PART OF AN EMERGENCY DATA BASE. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-682 075 15/6 15/3
NATIONAL PLANNING ASSOCIATION WASHINGTON D C ECONOMIC
PROGRAMMING CENTER
STUDIES FOR AN ECONOMIC MODEL FOR SURVIVAL AND
RECOVERY OF A SINGLE CITY. VOLUME II. ECONOMIC
ACTIVITIES AND RESOURCES: CLASSIFICATION AND DATA
INVENTORY. (U)

DESCRIPTIVE NOTE: FINAL REPT."
NOV 68 130P NORTON, JOHN DEWITT I

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME I, AD-682 074.

DESCRIPTORS: (=NUCLEAR WARFARE, (URBAN AREAS),
(=URBAN AREAS, RECOVERY),
MODELS(SIMULATIONS), CIVIL DEFENSE SYSTEMS,
DOCUMENTATION, NUCLEAR EXPLOSION DAMAGE, DAMAGE
ASSESSMENT, DATA STORAGE SYSTEMS, SURVIVAL,
CLASSIFICATION, THREAT EVALUATION, INDUSTRIES,
NATURAL RESOURCES, STATISTICAL ANALYSIS (U)
IDENTIFIERS: COMPUTER PRINTOUTS (U)

THIS STUDY (1) DISCUSSES PRINCIPLES FOR THE
CLASSIFICATION OF AREAS, ACTIVITIES AND OBJECTS
SUITABLE FOR USE IN AN ECONOMIC MODEL FOR PLANNING
SURVIVAL AND RECOVERY OF A SINGLE CITY FOLLOWING
NUCLEAR ATTACK; (2) DEVELOPS A TENTATIVE
CLASSIFICATION (SCC) FOR THIS PURPOSE CONSISTING OF
1430 ACTIVITIES, ADAPTED FROM THE STANDARD
INDUSTRIAL CLASSIFICATION (SIC) FOR
MANUFACTURING AND TRADE AND FROM THE STANDARD
LAND USE CODES (SLUC) FOR OTHER INDUSTRY
DIVISIONS, SUPPLEMENTED BY SPECIAL CLASSIFICATIONS
FOR CONSUMPTION, ECONOMIC PERFORMANCE MEASURES,
HOUSEHOLDS, MANPOWER, AND OCCUPATIONS; (3)
APPLIES THE SCC AS THE BASIS FOR INVENTORING BY
ACTIVITY THE AVAILABLE RESOURCE DATA AND INPUT
FACTORS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-682 476 15/6 15/3 13/12
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF
OPERATION FLAMBEAU-CIVIL DEFENSE EXPERIMENT AND
SUPPORT, (U)
JUN 68 59P BUTLER, CLAY P. ;
REPT. NO. USNRDL-TR-68-143

UNCLASSIFIED REPORT

DESCRIPTORS: (*CIVIL DEFENSE SYSTEMS, FIRES),
(*NUCLEAR EXPLOSIONS PASSIVE DEFENSE), URBAN
AREAS, FOREST FIRES, SIMULATION, SURVIVAL,
THRESHOLDS(PHYSIOLOGY), HAZARDS, ANOXIA,
POISONOUS GASES, THERMAL RADIATION, BLINDNESS,
MEASUREMENT, TIME, TEST METHODS (U)
IDENTIFIERS: FLAMBEAU OPERATION, FIRE DYNAMICS,
MASS FIRES, ESCAPE RESTRAINT TIME (U)

MEASUREMENTS WERE MADE OF STREET LEVEL LIFE HAZARDS
IN A 44 ACRE MASS FIRE OF BURNING PINYON TREES LAID
OUT IN A GEOMETRICAL PATTERN SIMULATING THE FUEL
LOADING OF A TYPICAL RESIDENTIAL AREA. THE LIFE
HAZARDS OF ANOXIA DUE TO OXYGEN DEPLETION, CARBON
DIOXIDE ASPHYXIA, CARBON MONOXIDE POISONING,
INTOLERABLE THERMAL RADIATION, HEAT PROSTRATION, LOSS
OF STREET VISIBILITY, AND TEMPORARY BLINDNESS FROM
LACHRYMATING GASES WERE CALCULATED ON THE BASIS OF
THE ESCAPE RESTRAINT TIME FOR ONE HOUR AND ONE DAY
THRESHOLD FOR SURVIVAL. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-683 568 15/3 6/18
OAK RIDGE NATIONAL LAB TENN
PROGRESS REPORT IN POSTATTACK ECOLOGY. (U)
DESCRIPTIVE NOTE: INTERIM PROGRESS REPT.,
MAR 69 60P AUERBACH, STANLEY I. ;
WITHERSPOON, JOHN P. , JR. ; KITCHINGS, JOSEPH T.
; III ; DUNAWAY, PAUL B. ; STYRON, CLARENCE E. ,
JR.
REPT. NO. ORNL-TM-2466
CONTRACT: W-7405-ENG-26

UNCLASSIFIED REPORT

DESCRIPTORS: (•RADIOACTIVE FALLOUT, RADIATION
EFFECTS), CIVIL DEFENSE SYSTEMS,
MODELS(SIMULATIONS), RADIOACTIVE ISOTOPES,
PLANTS(BOTANY), RATS, INSECTS, HYMENOPTERA,
CESIUM, STRONTIUM, BETA PARTICLES, DOSAGE,
SIMULATION, TEST METHODS, PARTICLE SIZE (U)
IDENTIFIERS: •POST ATTACK ECOLOGY, ALBITE
PARTICLES, SINELLA CURVISETA, HONEYJEES (U)

THE REPORT SUMMARIZES PROGRESS IN RESEARCH ON
POSTATTACK ECOLOGY, WHICH IS CONCERNED WITH THE
INTERIM AND LONG-TERM ENVIRONMENTAL CONSEQUENCES OF A
NUCLEAR ATTACK. THE PROGRAM IS PARTICULARLY
CONCERNED WITH THE EFFECTS OF FALLOUT AND RESIDUAL
RADIATION ON INSECTS, RODENTS AND NATIVE AND CROP
PLANTS. ARTIFICIAL FALLOUT PARTICLES CONTAINING
BETA RAY OR BETA-GAMMA RAY EMITTING ISOTOPES ARE
BEING USED EXTENSIVELY IN THE PROGRAM. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-664 934 15/3 15/2
STANFORD RESEARCH INST MENLO PARK CALIF
GENERAL ANALYSIS OF RADIOLOGICAL RECOVERY
CAPABILITIES. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
JUN 68 149P LEE, HONG ; OWEN, W. LEIGH ;
MILLER, CARL F. ;
CONTRACT: NON228-66-C-0231
PROJ: SRI-MU-5806
MONITOR: USNRDL THC-66-54

UNCLASSIFIED REPORT

DESCRIPTORS: (•RADIOLOGICAL WARFARE,
•DECONTAMINATION), (•CIVIL DEFENSE SYSTEMS,
DECONTAMINATION), EXPOSURE, DOSE RATE,
RADIATION EFFECTS, OPERATION, FALLOUT SHELTERS,
RADIOACTIVE FALLOUT, EFFICIENCY, SHIELDING,
PROTECTION, TARGETS, SURVIVAL, INTEGRALS,
MATHEMATICAL ANALYSIS, URBAN AREAS, RADIOLOGICAL
CONTAMINATION (U)
IDENTIFIERS: POST ATTACK OPERATIONS (U)

PREVIOUS INVESTIGATIONS ON THE ANALYSIS, PLANNING,
AND SCHEDULING OF RADIOLOGICAL RECOVERY OPERATIONS
HAVE RECOGNIZED AND IDENTIFIED MANY RELATED AND
IMPORTANT PROBLEM AREAS. THE REPORT TREATS SEVERAL
OF THESE PROBLEMS AND DERIVES METHODS AND ANALYTICAL
EXPRESSIONS APPROPRIATE TO THEIR SOLUTION.
PROCEDURES ARE DEVELOPED FOR ESTIMATING
DECONTAMINATION START TIMES WITH MINIMUM TOTAL
EXPOSURE TO GROUPS OF PEOPLE ENGAGED IN EITHER
DECONTAMINATION OR FACILITY OPERATIONS. METHODS OF
FORECASTING EXPOSURE DOSES TO DECONTAMINATION CREWS
AND FACILITY OPERATOR CREWS ARE REVISED, TO SIMPLIFY
EVALUATION OF THE EFFECT OF PRIOR AND CONCURRENT
DECONTAMINATION OPERATIONS ON THE EFFECTIVE RESIDUAL
NUMBER FOR A PRESCRIBED POSTATTACK ROUTINE. A
TECHNIQUE IS DEvised FOR RELATING THE SIZE OF
DECONTAMINATION ORGANIZATIONS TO THE DIMENSIONS OF
THE AREA TO BE DECONTAMINATED AND THE SURVIVING
POPULATIONS IN URBAN AREAS. THE FINAL PROBLEM
EXPLORED IS THE EFFECT OF INCREASED SIZE (AND
NUMBER) OF DECONTAMINATION CREWS ON THE
DECONTAMINATION COMPLETION TIME. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-684 941 15/3 15/6
SOUTHWEST RESEARCH INST SAN ANTONIO TEX
FIRE DEFENSE SYSTEMS ANALYSIS. (U)
FEB 69 113P EGGLESTON, LESTER A. ;
CONTRACT: N00226-67-C-2787
PROJ: SWRI-G3-2175-01
MONITOR: USNRDL TRC-68-66

UNCLASSIFIED REPORT

DESCRIPTORS: (•NUCLEAR WARFARE, FIRES), (•FIRES,
URBAN AREAS), FIRE SAFETY, CIVIL DEFENSE
SYSTEMS, SYSTEMS ENGINEERING, THERMAL RADIATION,
NUCLEAR RADIATION, BLAST, PROTECTION,
RESCUES (U)
IDENTIFIERS: FIRE STORMS, FIRE SPREAD (U)

SYSTEMS ANALYSIS PRINCIPLES ARE USED TO DEVELOP A
HYPOTHETICAL BUT NOT INFEASIBLE FIRE DEFENSE OF A
METROPOLITAN AREA UNDER NUCLEAR ATTACK CONDITIONS.
THIS IS DEFINED AS BEING EQUIVALENT TO THE
URBANIZED AREA LISTED BY THE BUREAU OF THE
CENSUS. THE PEACETIME DEFENSE ELEMENTS ARE
REVIEWED TOGETHER WITH THEIR NORMAL REQUIREMENTS AND
CONSTRAINTS. THE SYSTEM IS THEN EXAMINED UNDER
NUCLEAR ATTACK CONDITIONS, WITH NEW REQUIREMENTS AND
CONSTRAINTS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-685 867 15/3 9/2
RESEARCH TRIANGLE INST DURHAM N C
ANCET IMPROVEMENTS. (U)
DESCRIPTIVE NOTE: FINAL REPT. (VOLUME 1), 1 SEP 67-
30 NOV 68.
NOV 68 80P WOODSIDE, MARY B. :
REPT. NO. RTI-OU-371-2-VOL-1
CONTRACT: OCD-PS-64-56

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-685 868.

DESCRIPTORS: (•NUCLEAR WARFARE, CASUALTIES),
(•CASUALTIES, MATHEMATICAL MODELS), COMPUTER
PROGRAMS, CIVIL DEFENSE SYSTEMS, SUBROUTINES,
PROGRAMMING(COMPUTERS), MATHEMATICAL MODELS,
FLOW CHARTING (U)
IDENTIFIERS: ANCET(ANALYTICAL NUCLEAR CASUALTY
ESTIMATION TECHNIQUE), ANALYTICAL NUCLEAR
CASUALTY ESTIMATION TECHNIQUE (U)

ANCET IS A RAPID-RUNNING COMPUTER MODEL WHICH
CALCULATES CASUALTIES FROM A NUCLEAR ATTACK. IT
WAS DEVELOPED FOR SENSITIVITY ANALYSES OF CIVIL
DEFENSE SYSTEMS AND COMPONENTS; ITS STRUCTURE AND
LOGIC HAVE BEEN DOCUMENTED IN RESEARCH TRIANGLE
INSTITUTE RESEARCH REPORTS FOR THE OFFICE OF
CIVIL DEFENSE. THE PUBLICATION (FIRST OF A
TWO-VOLUME FINAL REPORT) OUTLINES THE IMPROVEMENTS
TO ANCET WHICH WERE ADDED DURING THIS RESEARCH
PERIOD (SEPTEMBER 1967 TO NOVEMBER 1968) TO
INCREASE FLEXIBILITY IN REPORTING RESULTS. THESE
REVISIONS ALLOW A USER THE CHOICE OF DETAILED OR
SUMMARY OUTPUT. ALSO INCLUDED ARE DESCRIPTIONS AND
FLOW DIAGRAMS OF ANCET SUBROUTINES WHICH
INCORPORATE THESE MODIFICATIONS AND PROGRAM LISTINGS
OF ALL ROUTINES WHICH HAVE BEEN ALTERED SINCE THE
ORIGINAL DOCUMENTATION OF ANCET. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-685 868 15/3 9/2
RESEARCH TRIANGLE INST DURHAM N C
PREPARATION OF THE ANCET DATA BASE. (U)
DESCRIPTIVE NOTE: FINAL REPT. (VOLUME 2), 1 SEP 67-
30 NOV 68,
NOV 68 114P WILKERSON, DORA B. I
REPT. NO. RT:-OU-371-2-VOL-2
CONTRACT: OCD-PS-64-56

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, AD-685 867.

DESCRIPTORS: (•NUCLEAR WARFARE, CASUALTIES),
(•DATA PROCESSING SYSTEMS, INSTRUCTION MANUALS),
CIVIL DEFENSE SYSTEMS, MATHEMATICAL MODELS,
PROGRAMMING(COMPUTERS), POPULATION,
VULNERABILITY (U)
IDENTIFIERS: ANCET(ANALYTICAL NUCLEAR CASUALTY
ESTIMATION TECHNIQUE), ANALYTICAL NUCLEAR
CASUALTY ESTIMATION TECHNIQUE (U)

THE PUBLICATION VOLUME IS A DETAILED DESCRIPTION OF
THE CONTENTS OF AND THE INSTRUCTIONS FOR PREPARING
THE DATA BASE FOR THE COMPUTER MODEL ANCET. THIS
ANALYTICAL COMPUTER MODEL WAS DESIGNED TO ASSIST IN
SENSITIVITY ANALYSES OF CIVIL DEFENSE SYSTEMS AND
COMPONENTS; IT FEATURES ANALYTICAL EXPRESSIONS WHICH
RESULT IN RAPID-RUNNING TIMES AND EASE OF CHANGING
INPUT VARIABLES; ITS STRUCTURE AND LOGIC HAVE BEEN
DOCUMENTED IN PAST RESEARCH TRIANGLE INSTITUTE
RESEARCH REPORTS. A SECOND COMPUTER MODEL, THE
ANCET INPUT PROCESSOR (AIP), WAS DESIGNED TO
PREPARE INPUT TAPES FOR ANCET; DETAILED
INSTRUCTIONS FOR AIP ARE CONTAINED IN THE ANCET
USER'S MANUAL. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-687 349 15/3 18/3
IIT RESEARCH INST CHICAGO ILL
EMP THREAT AND COUNTERMEASURES FOR CIVIL DEFENSE
SYSTEMS. (U)
NOV 68 49P BRIDGES, J. E. ; MEYER, J. ;
CONTRACT: DAMC20-68-C-0198

UNCLASSIFIED REPORT

DESCRIPTORS: (*NUCLEAR EXPLOSIONS, *ELECTROMAGNETIC
PULSES), (*ELECTRONIC EQUIPMENT, VULNERABILITY),
(*CIVIL DEFENSE SYSTEMS, PROTECTION), ELECTRICAL
EQUIPMENT, DAMAGE, HARDENING, ELECTROMAGNETIC
SHIELDING (U)

A BRIEF INTRODUCTORY DISCUSSION OF THE NUCLEAR
ELECTROMAGNETIC PULSE (EMP) AND ITS EFFECTS ON
ELECTRICAL/ELECTRONIC EQUIPMENT IS PRESENTED WITH
LISTS OF PRECAUTIONARY MEASURES WHICH MAY BE TAKEN
PRIOR TO, DURING, AND FOLLOWING A NUCLEAR ATTACK.
THE PRIMARY PURPOSE OF THESE PRECAUTIONS IS TO
MINIMIZE THE DAMAGING EFFECTS OF THE EMP ON
POPULATION SURVIVAL AND POST-ATTACK RECOVERY.
(AUTHOR) (U)

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-667 388 18/4 15/3
STANFORD RESEARCH INST MENLO PARK CALIF
ALTERNATIVE RADEF LOGISTICAL SYSTEMS.
DESCRIPTIVE NOTE: FINAL RESEARCH REPT.,
MAR 69 108P NORMAN, DAVID A. ;
CONTRACT: DAHC20-68-C-0136
PROJ: SRI-MU-6717

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (•CIVIL DEFENSE SYSTEMS, RADIATION
MONITORS); (•RADIATION MONITORS, LOGISTICS),
NUCLEAR EXPLOSIONS, RADIATION MEASUREMENT SYSTEMS,
SIMULATION, MATHEMATICAL ANALYSIS, MAINTENANCE,
CALIBRATION

(U)

THE STUDY DEVELOPED OPERATIONAL REQUIREMENTS FOR
THE QUANTITY, TYPE, ACCURACY, AND MISSION LIFE OF
RADIOLOGICAL INSTRUMENTS USED IN THE NATION'S
MONITORING SYSTEM. FIVE ALTERNATIVE LOGISTICAL
SYSTEMS WERE POSTULATED; FOUR OF THE SYSTEMS ARE
BASED ON THE SUDDEN ATTACK ACTIVATED CONCEPT AND ONE
SYSTEM IS BASED ON THE CRISIS ACTIVATED CONCEPT.
INSTRUMENT RELIABILITY, EFFECTIVENESS, AND
MAINTENANCE IS DISCUSSED. COST EFFECTIVENESS OF
THE FIVE SYSTEMS POSTULATED IS PRESENTED.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-686 162 15/3 5/3
RESEARCH ANALYSIS CORP MCLEAN VA
MODELS OF ECONOMIC CAPABILITY AFTER NUCLEAR
ATTACK.
DESCRIPTIVE NOTE: FINAL REPT.,
APR 69 97P SOBIN, BERNARD ; TUREK, JOAN
L. ;
REPT. NO. RAC-TP-352
CONTRACT: DAMC20-67-C-0137
PROJ: DA-107101

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (•NUCLEAR WARFARE, ECONOMICS),
(•ECONOMICS, SURVIVAL), MATHEMATICAL MODELS,
UNITED STATES, THREAT EVALUATION,
TRANSPORTATION, MONEY, MANAGEMENT PLANNING,
LINEAR PROGRAMMING, CIVIL DEFENSE SYSTEMS,
INDUSTRIAL PRODUCTION
IDENTIFIERS: INFLATION(ECONOMICS),
INVESTMENTS, •POSTATTACK RECOVERY, RESOURCE
ALLOCATION, PRICE CONTROLS

(U)

(U)

THE PAPER DESCRIBES EXTENSIONS AND PROPOSED
EXTENSIONS OF THE SCOPE OF A PREVIOUSLY DESCRIBED
MODEL OF CAPABILITIES OF THE US ECONOMY AFTER
NUCLEAR ATTACK. THE PREVIOUS PUBLICATION,
BERNARD SOBIN, 'A MODEL OF TECHNOLOGICAL
CAPACITY TO SUPPORT SURVIVORS OF NUCLEAR
ATTACK,' RAC-TP-313, SEPTEMBER 1968,
DESCRIBES A STATIC, LINEAR PROGRAMMING MODEL OF
PHYSICAL CAPABILITIES WITHOUT REGARD TO
TRANSPORTATION CONSTRAINTS. THAT MODEL IS HERE
AUGMENTED WITH A SUBMODEL SIMULATING AN EARLIER
PERIOD OF POSTATTACK RECONSTRUCTION PRECEDING THE
STEADY STATE ACCOUNTED FOR BY THE ORIGINAL MODEL.
ALSO PRESENTED IN THE PAPER IS A PRELIMINARY FORM
OF A MODEL OF THE INFLATIONARY PRESSURES THAT, UNDER
PRESENT PLANS FOR MANAGEMENT OF THE ECONOMY AFTER
NUCLEAR ATTACK, WOULD BE GENERATED BY THE ACTIVITIES
INCLUDED IN THE LINEAR PROGRAMMING MODEL.
(AUTHOR)

(U)

UNCLASSIFIED

LDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-688 941 15/3 13/12 18/3
IIT RESEARCH INST CHICAGO ILL ENGINEERING MECHANICS
DIV
MATHEMATICAL MODELING OF FIRE DEFENSES. (U)
DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. MAR 67-DEC 68,
MAR 69 54P TAKATA, ARTHUR N. I
CONTRACT: N00228-67-C-2081
PROJ: IITRI-J6118
MONITOR: USNRDL TRC-69-4

UNCLASSIFIED REPORT

DESCRIPTORS: (•NUCLEAR WARFARE, CIVIL DEFENSE
SYSTEMS), (•CIVIL DEFENSE SYSTEMS, FIRES),
BUILDINGS, AIRBURST, MATHEMATICAL MODELS,
MANPOWER, TRAINING, DAMAGE, DETECTION,
MATHEMATICAL PREDICTION, FIREFIGHTING VEHICLES,
PROBABILITY, URBAN AREAS (U)
IDENTIFIERS: •FIRE DEFENSES, MASS FIRES, FIRE
STORMS (U)

THE STUDY INVOLVES THE DEVELOPMENT OF TECHNIQUES TO
EVALUATE THE EFFECT OF FIRE DEFENSES ON BUILDING
FIRES CAUSED BY A NUCLEAR BURST AND THE INCORPORATION
OF THE FIRE-DEFENSE TECHNIQUES IN A FIRE-SPREAD
MODEL. THE RESULTANT COMPUTER PROGRAM ALLOWS
EVALUATION OF THE EFFECTIVENESS OF VARIOUS NUMBERS OF
SELF-HELP TEAMS, BRIGADES AND FIRE DEPARTMENT UNITS
IN SUPPRESSING AND CONTAINING BUILDING FIRES
SCATTERED THROUGHOUT A TRACT OF SEVERAL THOUSAND
BUILDINGS. PRELIMINARY COMPUTATIONS INDICATE THAT
WITHIN A FEW HOURS ABOUT 1/4 OF THE MANPOWER
AVAILABLE IN A TRACT CAN SUPPRESS ALL FIRES CREATED
BY THE INITIAL IGNITION OF 1/2 OR LESS OF THE
BUILDINGS. MOST OF THE MANPOWER, PARTICULARLY
THOSE IN THE SELF-HELP TEAMS, CAN BE DIVERTED TO
OTHER ACTIVITIES AFTER SEVERAL MINUTES OF EFFORT.
THE PRELIMINARY RESULTS SHOW THAT ORDINARY CITIZENS
WITH MINIMAL INSTRUCTION AND TRAINING CAN BRING ABOUT
VERY PRONOUNCED REDUCTIONS IN THE TOTAL FIRE DAMAGE.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-688 958 13/13 15/3 5/3
STANFORD RESEARCH INST MENLO PARK CALIF
PARAMETRIC STUDY OF SHELTER SYSTEM COSTS. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
JAN 69 293P LOGOTHETTI, T. J. ; GOEN, R.
L. ; RYAN, J. W. ; KAMRADT, C. A. ; WIEHLE, C.
K. ;
CONTRACT: DAHC20-67-C-0116
PROJ: SRI-MU-6250-D10

UNCLASSIFIED REPORT

DESCRIPTORS: (*NUCLEAR EXPLOSIONS, BLAST),
(*SHELTERS, COSTS), STRUCTURES, DESIGN,
SELECTION, REINFORCED CONCRETE, PROTECTION,
HARDNESS, CONSTRUCTION MATERIALS, UNDERGROUND
STRUCTURES, PERFORMANCE(ENGINEERING),
SPECIFICATIONS, CONFIGURATION, VENTILATION,
CONTROLLED ATMOSPHERES, STRUCTURAL PARTS, CIVIL
DEFENSE SYSTEMS (U)
IDENTIFIERS: OVERPRESSURE (U)

CURRENT RESEARCH DATA ON BLAST SHELTERS ARE
REVIEWED IN THE FIVE AREAS OF STRUCTURE, EARTHWORK,
ENTRANCEWAYS, ENVIRONMENTAL CONTROL SYSTEMS, AND
SUPPLIES. THE RESULTS OF THESE REVIEWS, PRESENTING
COST AND PERFORMANCE DATA IN GRAPHS AND TABLES, ARE
INCORPORATED INTO COST FUNCTIONS DEVELOPED TO
EVALUATE PRELIMINARY DESIGN CONCEPTS FOR A VARIETY OF
BLAST SHELTER SIZES, SHAPES, SPACE UTILIZATION
CONCEPTS, AND HARDNESS RATINGS. PREFERRED SHELTER
CONFIGURATIONS ARE SELECTED USING CRITERIA OF COSTS
PER UNIT FLOOR AREA AND PER OCCUPANT. QUESTIONABLE
COST ASSUMPTIONS AND PERFORMANCE SPECIFICATIONS ARE
IDENTIFIED AS AREAS FOR FURTHER RESEARCH.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-669 046 15/2 15/6
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D
C
MILITARY TOXICOLOGY AND PROTECTION AGAINST WEAPONS
OF MASS DESTRUCTION, (U)
MAY 69 298P KARAKCHIEV, N. I. I
REPT. NO. FSTC-MT-23-891-68
PROJ: FSTC-922362823U1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF MONO. VOENNAYA
TOSKSIKOLOGIYA I ZASHCHITA OT ORUZH'YA MASSOVOGO
PORAZHENIYA, N.P., P3-118, 136-188, 230-280 1968.

DESCRIPTORS: (•MILITARY MEDICINE, TOXICITY),
(•CHEMICAL WARFARE AGENTS, •TOXICITY), (•NUCLEAR
WARFARE, PASSIVE DEFENSE), NUCLEAR WEAPONS,
DECONTAMINATION, CIVIL DEFENSE SYSTEMS, LIQUID
ROCKET FUELS, USSR, MASS DESTRUCTION WEAPONS,
THERAPY, PATHOLOGY, HALLUCINOGENS, TOXIC AGENT
ALARMS (U)
IDENTIFIERS: TRANSLATIONS (U)

THE MANUAL DESCRIBES THE TOXICOLOGY OF POISONOUS
AGENTS AS WELL AS SOME COMPONENTS OF ROCKET FUEL AND
TECHNICAL FLUIDS, I.E., THE PHYSICO-CHEMICAL
PROPERTIES OF THESE SUBSTANCES, THE BIOCHEMICAL
MECHANISM OF THEIR ACTION ON THE ORGANISM, THE
CLINICAL ASPECTS, AND TREATMENT OF CASUALTIES. IT
ALSO DESCRIBES THE MILITARY PROPERTIES AND THE
INJURIOUS ACTION OF NUCLEAR WEAPONS, MEANS OF
DEFENSE, DOSIMETRY, DETECTION OF TOXIC AGENTS,
DEACTIVATION AND DEGASSING AND OTHER PROBLEMS OF
DEFENSE AGAINST MASS DESTRUCTION WEAPONS.
(AUTHOR) (U)

UNCLASSIFIED

DCC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-689 486 15/6 15/3

NATIONAL PLANNING ASSOCIATION WASHINGTON D C ECONOMIC
PROGRAMMING CENTER

STUDIES FOR AN ECONOMIC MODEL FOR SURVIVAL AND
RECOVERY OF A SINGLE CITY. VOLUME III. ECONOMIC
MODELS: METHODS, USES, PROSPECTS. (U)

DESCRIPTIVE NOTE: FINAL REPT.,

APR 69 203P

NORTON, JOHN DEWITT I

CONTRACT: OCD-PS-66-13

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, AD-682 074 AND
VOLUME 2, AD-682 075.

DESCRIPTORS: (NUCLEAR WARFARE, URBAN AREAS),
(URBAN AREAS, RECOVERY), URBAN PLANNING,
SURVIVAL, CIVIL DEFENSE SYSTEMS, ECONOMICS,
INDUSTRIES, MATHEMATICAL MODELS, DAMAGE

ASSESSMENT, DECISION MAKING

IDENTIFIERS: RESOURCE ALLOCATION

(U)

(U)

THE STUDY DESCRIBES AN INTERINDUSTRY PLANNING MODEL
FOR A SINGLE CITY POST-ATTACK, ITS FORMULATION AND
ITS PROSPECTIVE USE FOR TRAINING AND RESEARCH, AS
AN ALTERNATIVE TO THE INTEGRATED SYSTEM.
MULTIDISCIPLINARY APPROACH SEEMINGLY CALLED FOR TO
ANSWER FUNDAMENTAL QUESTIONS OF POST-ATTACK SURVIVAL
AND RECOVERY, A VERY DETAILED RESOURCE MODEL APPLIED
TO A SPECIFIC LOCALITY IS ADVANCED AS A PRESENTLY
MORE EXPEDIENT BASIS FOR ORCHESTRATING A MULTIFACETED
INQUIRY. AS BACKGROUND, THE POST-ATTACK POTENTIAL
OF BOTH THE NATION AND INDIVIDUAL CITIES IS EXAMINED
BY MEANS OF 'SURVIVAL QUOTIENTS.' THE PARM
NATIONAL MODEL OF THE REQUISITIONING TYPE IS THEN
DESCRIBED IN DETAIL. THE CONTRASTING NEED FOR AN
ALLOCATIONS TYPE MODEL FOR A SINGLE CITY IS
EXPLAINED, AND A TENTATIVE FORMULATION FOR SUCH A
MODEL TO BE CALLED REAL (RESOURCE ALLOCATION)
IS OUTLINED. ITS USES FOR TRAINING, FOR SCENARIO
GENERATION, FOR EXPLORATION OF STRATEGIES AND
LIMITATIONS OF DECISION MAKING, AND FOR POSSIBLE
POST-ATTACK OPERATIONAL PLANNING ARE DISCUSSED.
IMPLEMENTATION IS PROPOSED IN CONJUNCTION WITH
DEVELOPMENT OF PEACETIME URBAN PLANNING CAPABILITIES
NOW FOSTERED BY VARIOUS FEDERAL AGENCIES, AND WITH
THE EXPANSION AND ELABORATION OF THE FEDERAL
STATISTICAL SYSTEM. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-689 543 15/6
INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA SYSTEMS
EVALUATION DIV
ESTABLISHING CONFIDENCE LIMITS ON DAMAGE ASSESSMENT
ESTIMATES: AN EXAMINATION OF TWO MODELS. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
APR 69 77P GARDNER, CHARLES W. ; WHITE,
THOMAS W. ;
REPT. NO. S-342
CONTRACT: OCD-PS-66-113
MONITOR: IDA/HQ 68-9444

UNCLASSIFIED REPORT

DESCRIPTORS: (NUCLEAR WARFARE CASUALTIES,
MATHEMATICAL MODELS), CONFIDENCE LIMITS, NUCLEAR
WARFARE, MATHEMATICAL PREDICTION, CIVILIAN
PERSONNEL, NUCLEAR EXPLOSION DAMAGE, UNCERTAINTY,
RADIOLOGICAL CONTAMINATION, RADIOACTIVE FALLOUT,
RADIATION TOLERANCE, CIVIL DEFENSE SYSTEMS, DOSE
RATE, DAMAGE ASSESSMENT, PROBABILITY DENSITY
FUNCTIONS (U)
IDENTIFIERS: QUICK COUNT DAMAGE ASSESSMENT MODEL, (U)
BRISK/FRISK DAMAGE ASSESSMENT MODEL (U)

CASUALTY PREDICTION IN THE CASE OF NUCLEAR WAR, AND
THE CONFIDENCE LIMITS WHICH CAN BE PLACED ON
ESTIMATES OF CIVILIAN FATALITIES ARE CONSIDERED.
ATTENTION IS DIRECTED AT THE UNCERTAINTIES IN
CASUALTY PREDICTION INTRODUCED BY THE LESS THAN A
DOZEN PARAMETERS USED IN TWO SPECIFIC DAMAGE
ASSESSMENT MODELS, NAMELY THE BRISK/FRISK AND THE
QUICK COUNT MODELS. THE INTENT OF THE STUDY IS
TWOFOLD: FIRST, TO DEVELOP A GENERAL METHOD FOR
MEASURING THE DEGREE OF CONFIDENCE TO BE ASSOCIATED
WITH A SPECIFIED FATALITY ESTIMATE, GIVEN THE DAMAGE
ASSESSMENT MODEL AND APPROPRIATE INPUTS; AND SECOND,
TO DEMONSTRATE THE METHOD BY EXAMPLE. (AUTHOR) (U)

UNCLASSIFIED

JDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-690 631 10/3 18/4 15/3
TRACERLAB/WEST RICHMOND CALIF
RADIAC POWER REQUIREMENTS STUDY. (U)
DESCRIPTIVE NOTE: FINAL REPT. MAY 67-JUL 68,
MAY 68 43P STURMAN, IVAN P. ; KLEINSTEIN,
BENJAMIN J. ;
REPT. NO. TLA-6009
CONTRACT: N00228-67-C-02307
MONITOR: USNRUL TRC-69-16

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SPONSORED IN PART BY OFFICE OF
CIVIL DEFENSE, WASHINGTON, D. C.

DESCRIPTORS: (RADIATION MONITORS, POWER
SUPPLIES), (DRY CELLS, RADIATION MONITORS),
CIVIL DEFENSE SYSTEMS, OPERATIONAL READINESS,
OPERATION, TEST METHODS, VOLTAGE, THERMAL
STABILITY, AGING(MATERIALS), COSTS (U)
IDENTIFIERS: CD V-715 INSTRUMENTS, RADIOLOGICAL
SURVEY INSTRUMENTS (U)

AS PART OF THE OFFICE OF CIVIL DEFENSE TASK
TO IMPROVE THE CAPABILITIES OF RADIOLOGICAL SURVEY
INSTRUMENTS, A STUDY WAS PERFORMED TO INVESTIGATE THE
POWER REQUIREMENTS OF THE CD V-715 INSTRUMENTS
AND THE CHARACTERISTICS OF THE SPECIFIED POWER SOURCE
CELLS. VOLTAGE AND CURRENT MEASUREMENTS TAKEN
UNDER LOAD WERE CORRELATED WITH CELL AGE. TESTS
INCLUDED OPERATION OF THE CELLS AT TEMPERATURE
EXTREMES SPECIFIED AS OPERATING LIMITS FOR THE CD
V-715, AS WELL AS CONTINUOUS OPERATION OF
CONVENTIONAL AND OTHER COMMERCIALY AVAILABLE CELL
TYPES UNTIL THE INSTRUMENT COULD NO LONGER BE ZEROED.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-690 932 13/2 6/18

MERRIMACK COLL NORTH ANDOVER MASS DIV OF ENGINEERING
EVALUATION OF FALLOUT CONTAMINATION FROM SURFACE
RUNOFF. (U)

DESCRIPTIVE NOTE: FINAL REPT. 1 AUG 67-31 DEC 68.

MAR 69 204P GRUNE, WERNER N. KEARNS,

DONALD A. ; ATLAS, HENRY S. ;

CONTRACT: N00228-68-C-0173

PROJ: MERRIMACK-A-400

MONITOR: USNRDL TRC-69-7

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-661 249.

DESCRIPTORS: (CIVIL DEFENSE SYSTEMS, WATER
SUPPLIES), (RADIOACTIVE FALLOUT, MATHEMATICAL
MODELS), RADIOLOGICAL CONTAMINATION, URBAN AREAS,
EROSION, TRANSPORT PROPERTIES, FLUID FLOW,
SEDIMENTATION, STORAGE, DIFFUSION,
PROGRAMMING (COMPUTERS), VULNERABILITY, PUBLIC
HEALTH (U)

IDENTIFIERS: RUNOFF, GROUND WATER,
WATERSHEDS (U)

STUDIES OF WATER CONTAMINATION FROM FALLOUT
INDICATED THAT ACTIVITY BROUGHT INTO A WATER SUPPLY
BY SURFACE RUNOFF INCREASES THE ACTIVITY
CONCENTRATION CONSIDERABLY. THESE STUDIES EMPLOYED
A CONSTANT VALUE FOR THE 'RUNOFF COEFFICIENT' TO
ESTIMATE THE DEGREE OF CONTAMINATION RESULTING FROM
THE SOLUBLE FRACTION OF FALLOUT. THE REPORT
INVESTIGATES THE VULNERABILITY OF THE WATER SUPPLY
SYSTEMS OF THE 'FIVE CITIES' TO NUCLEAR ATTACK,
TAKING INTO CONSIDERATION AVAILABILITY OF GROUND AND
SURFACE WATER, EFFECTIVENESS OF TREATMENT PLANTS, AND
STORAGE CAPACITY. IT WAS FOUND THAT THE FRACTION
OF U. S. CITIES USING GROUND WATER HAVE
PREVIOUSLY BEEN OVERESTIMATED. DATA AND RECORDS
INDICATE CLEARLY THAT ABOUT 80% OF THE U. S.
POPULATION AND DAILY WATER CONSUMPTION IN THE U.
S. IS DERIVED FROM SURFACE WATER SOURCES. THE
REPORT ALSO PRESENTS THE COMPLETE ACTIVITY DEPOSITION
PROGRAM, DEVELOPED BY THE AUTHORS FROM THE MILLER-
BROWN FALLOUT MODEL AND APPLIES IT TO TWO TEST
CASES, PROVIDENCE, RHODE ISLAND AND SAN
FRANCISCO, CALIFORNIA. ALSO, THE REPORT
PRESENTS A GENERAL SOLUTION TO THE PROBLEM OF THE
TRANSPORT OF SOLUBLE ACTIVITY IN THE RUNOFF WATER.
THE EROSION AND TRANSPORT OF INSOLUBLE FALLOUT, AS
WELL AS THE UPTAKE OF DISSOLVED ACTIVITY BY SUSPENDED
SEDIMENT, ARE DISCUSSED. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-691 134 15/3 15/6
STANFORD RESEARCH INST MENLO PARK CALIF
EVALUATION OF CIVIL DEFENSE OPERATIONAL
CONCEPTS. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
NOV 68 SIP LAURINO, RICHARD ; KAMRADT, C.
ALEXANDER ;
CONTRACT: DAMC20-67-C-0116
PROJ: SRI-MU-0250-C20

UNCLASSIFIED REPORT

DESCRIPTORS: (•NUCLEAR WARFARE, CIVIL DEFENSE
SYSTEMS), (•CIVIL DEFENSE SYSTEMS,
•COUNTERMEASURES), DAMAGE ASSESSMENT, NUCLEAR
EXPLOSION DAMAGE, FIRES, EXPLOSION EFFECTS,
VULNERABILITY, RADIATION HAZARDS, NUCLEAR WARFARE
CASUALTIES, FALLOUT SHELTERS, AIRBURST, SURFACE
BURST, RADIOACTIVE FALLOUT, DOSE RATE, STATISTICAL
DATA, CIVIL DEFENSE PERSONNEL (U)
IDENTIFIERS: 605(BASIC OPERATING SITUATIONS),
BASIC OPERATING SITUATIONS (U)

THE CONCEPTS OF CIVIL DEFENSE OPERATIONAL PLANNING
FOR THE TRANSATTACK PERIOD ON THE BASIS OF EXPECTED
OPERATIONAL SITUATIONS OR CONTINGENCIES ARE REVIEWED.
NINE SITUATIONS BASED ON COMBINATIONS OF SELECTED
LEVELS OF FALLOUT INTENSITIES AND WEAPON-CAUSED FIRES
ARE CONSIDERED, INCLUDING ONE SITUATION INVOLVING NO
WEAPONS EFFECTS. THE REQUIRED EMERGENCY OPERATIONS
ATTENDANT TO EACH SITUATION ARE IDENTIFIED. THE
GEOGRAPHICAL AREA FOR WHICH OPERATIONAL CONTINGENCY
PLANS WOULD BE DEVELOPED WOULD BE SUCH THAT THE
OPERATIONAL SITUATION WOULD BE THE SAME THROUGHOUT
THE AREA. ACCORDINGLY, STATISTICAL MEASURES WERE
DEVELOPED AS THE BASIS FOR SELECTION OF THE UNIT
AREAS WHICH SHOW THE FALLOUT INTENSITY GRADIENTS AS A
FUNCTION OF A RANGE OF WEAPON YIELDS AND PROBABLE
WIND CONDITIONS, EXPECTED THERMAL IGNITION RANGES,
AND OVERPRESSURE SCALING FUNCTIONS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-691 353 13/12 15/3
URS RESEARCH CO BURLINGAME CALIF
DEVELOPING A BLAST-RESISTANT CARBON-SMOKE
GENERATOR FOR CIVIL DEFENSE.
DESCRIPTIVE NOTE: FINAL REPT.,
MAR 69 78P BLACK, R. ; STAACKMANN, M. ;
REPT. NO. URS-701-4
CONTRACT: N00228-68-C-2389
PROJ: OCD-2553C

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (*CIVIL DEFENSE SYSTEMS, SMOKE
GENERATORS), (*SMOKE GENERATORS, *FIRE SAFETY),
HARDENING, COST EFFECTIVENESS, FUELS, THERMAL
RADIATION, NUCLEAR EXPLOSIONS, BLAST, DETONATION
WAVES, URBAN AREAS, SHOCK TUBES, SMOKE SCREENS,
THERMAL INSULATION

(U)

IDENTIFIERS: *CARBON SMOKE GENERATORS,
OVERPRESSURE

(U)

THE STUDY EXAMINES METHODS OF PROVIDING BLAST
RESISTANCE FOR CIVIL DEFENSE SMOKE SCREEN GENERATORS.
BECAUSE THE GENERATOR CONTAINS LIQUID FUEL AND AN
IGNITION SOURCE, IT WOULD CREATE A SERIOUS FIRE
HAZARD IN AN URBAN ENVIRONMENT UNDER NUCLEAR ATTACK.
THE MAIN EFFORT OF THIS RESEARCH PROJECT WAS
DIRECTED TOWARD TESTING METHODS FOR CONFINING THE
FUEL AND TESTING THE UNCONVENTIONAL COMPONENTS OF A
SMOKE GENERATOR. FUNCTIONAL TESTS WERE PERFORMED
TO ASSURE PRODUCTION OF SMOKE. BLAST-RESISTANCE
TESTING (UP TO 10 PSI) UTILIZED SHOCK TUNNEL
FACILITIES. TEST RESULTS SHOW THAT THE BLAST-
HARDENED SMOKE GENERATOR WAS OPERABLE DURING AND
AFTER THE PASSAGE OF A 5-PSI BLAST WAVE. FIRE
HAZARDS RELATIVE TO FUEL STORAGE WERE SATISFACTORILY
LIMITED AT PEAK OVERPRESSURES UP TO 10 PSI.
ORDINARY FIRE SAFETY PRECAUTIONS OF EXCLUDING
FLAMES AND FLAMMABLE MATERIALS WITHIN 20 FT OF A
HARDENED SMOKE GENERATOR WERE FOUND TO BE SUFFICIENT
TO ELIMINATE THE FIRE HAZARD. A PRELIMINARY COST
ESTIMATE COMPARES A BLAST-HARDENED GENERATOR WITH AN
UNHARDENED GENERATOR. (AUTHOR)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-693 100 18/8

STANFORD RESEARCH INST MENLO PARK CALIF

BETA RADIATION DOSIMETRY FOR FALLOUT EXPOSURE

ESTIMATES: COMPARISON OF THEORY AND EXPERIMENT. (U)

DESCRIPTIVE NOTE: FINAL REPT.,

JUN 69 73P MACKIN, JAMES L. ; BROWN,

STEPHEN L. ; LANE, WILLIAM B. ;

CONTRACT: N00228-68-C-3049

PROJ: SRI-MU-7402

MONITOR: USNRDL TRC-69-26

UNCLASSIFIED REPORT

DESCRIPTORS: (•RADIOACTIVE FALLOUT, •BETA PARTICLES), (•LITHIUM FLUORIDES, DOSIMETERS), (•DOSIMETERS, BETA PARTICLES), CIVIL DEFENSE SYSTEMS, DOSE RATE, RADIATION HAZARDS, SURFACE ROUGHNESS (U)

THE DOSIMETRY OF EXPOSURE TO FALLOUT BETA RADIATION WAS INVESTIGATED THROUGH COMPARISONS OF THEORETICAL TREATMENTS WITH RESULTS FROM EXPERIMENTAL MEASUREMENTS USING LITHIUM FLUORIDE DETECTORS. AGREEMENT RANGED FROM NEAR PERFECT IN SIMPLE GEOMETRIES TO FACTOR-OF-TWO DISCREPANCIES IN THE MORE COMPLICATED CASES. INTERPRETATIONS OF THE DIFFERENCES ARE DISCUSSED IN TERMS OF BACKSCATTERING AND OTHER EFFECTS. DATA ON SURFACE ROUGHNESS ATTENUATION ARE PRESENTED AND ANALYZED.

(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-693 520 18/8 18/3 15/6
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF
PRELIMINARY ANALYSIS OF THE APPLICATION OF FALLOUT
MONITORING DATA TO FALLOUT PREDICTION DURING AND
AFTER A NUCLEAR ATTACK, (U)
MAY 69 62P MINVIELLE, LAURENCE J. P. ;
HOFFMAN, DAVID W. ; RAINEY, SAMUEL C. ;
REPT. NO. USNRDL-TR-69-38

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SPONSORED BY OFFICE OF CIVIL
DEFENSE, WASHINGTON, D. C., CONTRACT OCD-PS-66-
66-20J(65).

DESCRIPTORS: (•NUCLEAR EXPLOSIONS, RADIOACTIVE
FALLOUT), (•RADIOACTIVE FALLOUT, MATHEMATICAL
PREDICTION), NUCLEAR WARFARE, CIVIL DEFENSE
SYSTEMS, MONITORS, DISTRIBUTION, DENSITY,
SURFACE BURST, NUCLEAR RADIATION, METEOROLOGICAL
PARAMETERS, PARTICLE SIZE, MATHEMATICAL MODELS (U)
IDENTIFIERS: NUCLEAR CLOUDS (U)

THE APPLICABILITY OF FALLOUT MONITORING INFORMATION
TO THE IMPROVEMENT OF PREDICTION OF THE DISTRIBUTION
OF FALLOUT DURING OR AFTER A NUCLEAR ATTACK IS
DISCUSSED. AN ANALYTIC TECHNIQUE IS DEVELOPED FOR
PREDICTING FALLOUT RADIOACTIVITY SURFACE DENSITY
(OR EXPOSURE RATE IF CONVERTED) AT LOCATIONS
DOWNWIND FROM A MONITORING STATION AT WHICH A
MEASUREMENT OF RADIOACTIVITY SURFACE DENSITY OR
EXPOSURE RATE IS TAKEN AFTER FALLOUT CESSATION.
ALSO DEVELOPED IS A METHOD FOR PREDICTING FALLOUT
ARRIVAL, DEPOSITION-DURATION, AND CESSATION TIMES FOR
POINTS IN A FALLOUT FIELD BASED ON MEASUREMENTS OF
THESE PARAMETERS AT A SINGLE MONITORING STATION.
(AUTHOR) (U)

UNCLASSIFIED

JDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-693 877 15/3 15/6
STANFORD RESEARCH INST MENLO PARK CALIF
CRITICAL FACTORS AFFECTING NATIONAL SURVIVAL. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
MAR 69 112P GOEN, RICHARD L. ; CLARK,
DONALD E. ; KAMRADT, C. ALEXANDER ; RYAN, JOHN
W. ; BOTHUN, RICHARD B. ;
CONTRACT: DAHC20-67-C-0116
PROJ: SRI-MU-6250-050

UNCLASSIFIED REPORT

DESCRIPTORS: (•NUCLEAR WARFARE, RECOVERY), CIVIL
DEFENSE SYSTEMS, SURVIVAL, NUCLEAR RADIATION,
BLAST, NUCLEAR EXPLOSION DAMAGE, FOOD,
PROCESSING, STORAGE, HOUSING, INDUSTRIES,
LABOR (U)
IDENTIFIERS: •POSTATTACK RECOVERY, SMSA (STANDARD
METROPOLITAN STATISTICAL AREAS), STANDARD
METROPOLITAN STATISTICAL AREAS (U)

THE REPORT CONTINUES A STUDY OF NATIONAL SURVIVAL
AND RECOVERY FROM NUCLEAR ATTACK. SELECTED PROBLEM
AREAS DEALING WITH THE INITIAL RECOVERY PHASE, FOOD
PROCESSING, AND MANUFACTURING CAPACITY ARE TREATED.
THE EXTENT TO WHICH UNDAMAGED COMMUNITIES COULD
ACCOMMODATE THE HOMELESS FROM DAMAGED STANDARD
METROPOLITAN STATISTICAL AREAS IS ANALYZED FOR
DETROIT IN DETAIL AND MORE GENERALLY ON A
NATIONWIDE BASIS. ESTIMATES ARE MADE OF THE
SURVIVING FOOD STOCKS AND PROCESSING CAPACITY OF THE
SUGAR AND GRAIN INDUSTRIES AND RELATED TO THE
SURVIVOR REQUIREMENTS. LABOR SURVIVAL IN EACH
MANUFACTURING SECTOR IS CALCULATED, AND THE EFFECTS
OF THE LABOR SHORTAGES ARE ANALYZED.
(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-693 885 15/3
STANFORD RESEARCH INST MENLO PARK CALIF
DEBRIS REMOVAL CIVIL DEFENSE OPERATIONS, VOLUME
1.
DESCRIPTIVE NOTE: FINAL REPT.,
MAR 69 266P WICKHAM, GEORGE E. I
CONTRACT: DAHC20-67-C-0136

(U)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: DETACHABLE SUMMARY INSERTED.
PREPARED IN COOPERATION WITH JACOBS ASSOCIATES, SAN
FRANCISCO, CALIF., REPT. NO. TR-101-VOL-1.

DESCRIPTORS: (*NUCLEAR EXPLOSION DAMAGE, DEBRIS),
(*DEBRIS, REMOVAL), MANAGEMENT PLANNING, CIVIL
DEFENSE SYSTEMS, URBAN AREAS, SANITARY ENGINEERING,
EARTH-HANDLING EQUIPMENT, MATHEMATICAL MODELS,
INVENTORY

(U)

IDENTIFIERS: POSTATTACK RECOVERY, CONSTRUCTION
EQUIPMENT, REFUSE DISPOSAL

(U)

METHODS OF PLANNING AND IMPLEMENTING DEBRIS REMOVAL
OPERATIONS FOR URBAN AREAS FOLLOWING A NUCLEAR
EXPLOSION ARE PRESENTED. PROCEDURES ARE GIVEN FOR
PRE-EVENT INVENTORYING OF EQUIPMENT AND OTHER
ESSENTIAL RESOURCES AND FOR ALLOCATING THEM DURING AN
EMERGENCY. PRACTICAL DEBRIS REMOVAL TASK SITUATION
ANALYSIS TECHNIQUES ARE DESCRIBED. PRODUCTIVITY OF
VARIOUS GROUPS OF CONVENTIONAL CONSTRUCTION
EQUIPMENT, LIKELY TO BE AVAILABLE, IS TABULATED.
(AUTHOR)

(U)

UNCLASSIFIED

ODC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-694 536 15/3 13/2
ENGINEERING-SCIENCE INC ARCADIA CALIF
WATER AND SANITATION SYSTEMS, POSTATTACK STUDY.
VOLUME I. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
AUG 69 105P ADAMS, LARRY W. ; JORGENSEN,
ALFRED W. ; NOSANOV, MYRON E. ;
REPT. NO. ES-704
CONTRACT: DAMC20-68-C-0172
PROJ: OCD-3441B

UNCLASSIFIED REPORT

DESCRIPTORS: (•NUCLEAR EXPLOSION DAMAGE, CIVIL
DEFENSE SYSTEMS), (•CIVIL DEFENSE SYSTEMS,
SANITARY ENGINEERING), VULNERABILITY, RECOVERY,
WATER SUPPLIES, SYSTEMS ENGINEERING, PERSONNEL,
PROGRAMMING(COMPUTERS) (U)
IDENTIFIERS: RTE(RECOVERY TECHNIQUE
EVALUATION), RECOVERY TECHNIQUE EVALUATION,
RECOVERY OPERATIONS, POSTATTACK RECOVERY (U)

THE OBJECTIVE OF THE STUDY WAS TO DEVELOP AND TEST
AN IMPROVED TECHNICAL BASIS FOR THE SELECTION AND
ANALYSIS OF REPAIR AND RECOVERY METHODOLOGIES WHICH
WILL ASSIST IN THE REESTABLISHMENT OF THE SANITARY
ENVIRONMENT IN THE PERIOD AFTER A NUCLEAR ATTACK OR
OTHER MAJOR DISASTER. IN ACCOMPLISHING THIS
OBJECTIVE, THE SANITARY ENVIRONMENT CONTROL
SYSTEMS OF DETROIT, MICHIGAN WERE UTILIZED TO
TEST AND EVALUATE THE CONCEPTS AND METHODS DEVELOPED.
THE CONCEPT OF VULNERABILITY IS EXPANDED TO INCLUDE
NUMEROUS FACTORS IN ADDITION TO THE POTENTIAL DAMAGE
TO PHYSICAL SYSTEM COMPONENTS, INCLUDING UTILITY
ADMINISTRATION, OPERATIONAL SELF-SUFFICIENCY,
COMMUNICATIONS, PLANNING FOR EMERGENCY OPERATION, AND
LEVEL OF PERSONNEL TRAINING. GUIDELINES FOR
DEVELOPING A COMPREHENSIVE VULNERABILITY RATING
PROCEDURE ARE PRESENTED. A PROCEDURE, ENTITLED THE
'RECOVERY TECHNIQUE EVALUATION,' HAS BEEN
DEVELOPED TO BE UTILIZED IN DEFINING AND EVALUATING
ALTERNATIVE POSTATTACK REPAIR AND RECOVERY
STRATEGIES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-695 382 13/12 15/3 15/6

URS RESEARCH CO BURLINGAME CALIF

CAPABILITIES OF FIRE SERVICES TO LIMIT DAMAGE FROM
NUCLEAR ATTACK. (U)

DESCRIPTIVE NOTE: FINAL REPT.,

MAY 69 94P MARTIN, S. B. IRAMSTAD, R.

N. I

REPT. NO. URS-696-5

CONTRACT: NDC228-68-C-1792

PROJ: OCD-2522E

UNCLASSIFIED REPORT

DESCRIPTORS: (*NUCLEAR EXPLOSIONS, URBAN AREAS),
(*URBAN AREAS, *FIRES), (*CIVIL DEFENSE SYSTEMS,
*FIRE SAFETY), EFFECTIVENESS, MATHEMATICAL
MODELS, NUCLEAR EXPLOSION DAMAGE, NUCLEAR WARFARE,
THREAT EVALUATION, ORGANIZATIONS, OPERATION (U)

IDENTIFIERS: MASS FIRES, OVERPRESSURE, FIRE
SPREAD (U)

THE OBJECTIVE OF THE RESEARCH WAS TO DEVELOP A
GENERAL ANALYTICAL METHOD FOR EVALUATING THE
POTENTIAL EFFECTIVENESS OF FIRE SERVICES UNDER
NUCLEAR ATTACK CONDITIONS AND TO DETERMINE A SET OF
MODES OF FIRE-SERVICE OPERATION WHICH WOULD MAKE THE
BEST USE OF THE FIRE SERVICES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-695 383 13/12 18/3 15/6 15/3
URS RESEARCH CO BURLINGAME CALIF
EFFECTS OF AIR BLAST ON URBAN FIRE RESPONSE. (U)
DESCRIPTIVE NOTE: FINAL REPT.:
MAY 69 156P MARTIN, S. B. RAMSTAD, R.
W. GOODALE, T. START, C. A. ;
REPT. NO. URS-705-5
CONTRACT: N00228-68-C-3011
PROJ: OCD-2534F

UNCLASSIFIED REPORT

DESCRIPTORS: (•NUCLEAR EXPLOSIONS, URBAN AREAS),
(•URBAN AREAS, •FIRES), (•BLAST, MATHEMATICAL
MODELS), IGNITION, COMPRESSIBLE FLOW, SHOCK
TUBES, FUELS, COMBUSTION, AREA COVERAGE,
VULNERABILITY, BUILDINGS, THERMAL RADIATION,
DETONATION WAVES, NUCLEAR WARFARE, CIVIL DEFENSE
SYSTEMS (U)
IDENTIFIERS: OVERPRESSURE, MASS FIRES, FIRE
SPREAD (U)

THE OBJECTIVE OF THE RESEARCH EFFORT WAS TO
DETERMINE THE NATURE AND MAGNITUDE OF THE EFFECTS OF
BLAST-FIRE INTERACTION ON THE VULNERABILITY OF URBAN
AREAS TO NUCLEAR-WEAPON-CAUSED FIRES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-695 636 13/12 20/13 15/3
IIT RESEARCH INST CHICAGO ILL ENGINEERING MECHANICS
DIV
POWER DENSITY RATING FOR FIRE IN URBAN AREAS. (U)
DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. SEP 68-APR 69,
APR 69 94P TAKATA, ARTHUR N. ; SALZBERG,
F. ;
REPT. NO. IITR1-J6149-FR
CONTRACT: N00228-C-2774
PROJ: IITR1-J6149, OCD-25380

UNCLASSIFIED REPORT

DESCRIPTORS: (*NUCLEAR EXPLOSIONS, FIRES),
(*FIRES, URBAN AREAS), (*THERMAL RADIATION,
MATHEMATICAL MODELS), PROGRAMMING (COMPUTERS),
POPULATION, ROADS, BUILDINGS, RADIOACTIVE
FALLOUT, EXPOSURE, IGNITION, BURNS,
THRESHOLDS (PHYSIOLOGY), HEAT TOLERANCE, CIVIL
DEFENSE SYSTEMS (U)
IDENTIFIERS: FIRE SPREAD, MASS FIRES, (U)
*COMPUTERIZED SIMULATION

THE STUDY INVOLVES THE DEVELOPMENT OF A COMPUTER
CODE TO PREDICT THE POWER DENSITY (RATE OF HEAT
GENERATION PER UNIT LAND AREA) PRODUCED BY BUILDING
FIRES CAUSED BY A NUCLEAR ATTACK ON AN URBAN AREA AND
ITS APPLICATION TO TYPICAL AREAS OF SAN JOSE AND
ALBUQUERQUE FOR VARIOUS ATTACK CONDITIONS. A
SCHEME WAS ALSO DEVELOPED TO RAPIDLY ESTIMATE THE
POWER DENSITY BY HAND CALCULATION. IN ADDITION TO
PREDICTING THE POWER DENSITY, THE CODE PREDICTS THE
RADIANT INTENSITIES IN THE STREETS FROM THE BURNING
BUILDINGS AND THE RADIANT HEATING OF THE AIR.
ALSO, STUDIES WERE CONDUCTED TO ASCERTAIN THE
EFFECTS OF THE THERMAL ENVIRONMENT ON PERSONNEL IN
THE STREETS AND RELATED TO THE EFFECTS OF FALLOUT.
PERMISSIBLE EXPOSURE TIMES ARE INDICATED FOR THE
TWO EFFECTS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-695 641 5/3 15/3
STANFORD RESEARCH INST MENLO PARK CALIF
REQUIREMENTS FOR COMPARATIVE EVALUATION OF
COUNTERMEASURES TO POSSIBLE POSTATTACK FISCAL
PROBLEMS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,
APR 69 48P DRESCH, FRANCIS W. I
CONTRACT: DAHC20-67-C-0016
PROJ: SRI-6250-GS4, OCO-3E31E

UNCLASSIFIED REPORT

DESCRIPTORS: (CIVIL DEFENSE SYSTEMS, ECONOMICS),
(NUCLEAR EXPLOSION DAMAGE, COUNTERMEASURES),
MATHEMATICAL MODELS, MONEY, CONTROL, PRODUCTION,
LABOR, MANAGEMENT PLANNING, CIVIL DEFENSE
SYSTEMS

(U)

IN THE COURSE OF RESEARCH ON TOTAL VULNERABILITY, A
QUANTITATIVE MODEL HAS BEEN DEVELOPED FOR USE IN
DESCRIBING FINANCIAL AND OTHER INSTITUTIONAL SYSTEMS
RELATED TO THE ECONOMY AS A WHOLE. THE REPORT
DISCUSSES SELECTED APPLICATIONS OF THE PROTOTYPE
MODEL TO POSTATTACK PLANNING AND CONSIDERS THE
FEASIBILITY OF EXTENDING IT TO FACILITATE ITS USE FOR
SUCH APPLICATIONS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-695 668 15/2 15/3 6/18

FLOW CORP WATERTOWN MASS NUCLEAR DIV
DECONTAMINATION OF FINITE RECTANGULAR AREAS. (U)
DESCRIPTIVE NOTE: FINAL REPT.:

AUG 69 98P STARBIRD, A. W. ;
REPT. NO. CONESCO-4897
CONTRACT: DAHC20-70-C-0216
PROJ: OCD-3216P

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOLOGICAL WARFARE,
DECONTAMINATION), (*BUILDINGS, *RADIOLOGICAL
CONTAMINATION), (*WALLS, SCATTERING), CIVIL
DEFENSE SYSTEMS, RADIOLOGICAL DOSAGE,
PROGRAMMING (COMPUTERS), RADIOACTIVITY,
INTENSITY, DISTRIBUTION, REDUCTION, EXPOSURE (U)
IDENTIFIERS: *RADIOLOGICAL DECONTAMINATION
IMPORTANCE FACTORS, CONSTRIIP 3 COMPUTER PROGRAM,
COMPUTER ANALYSIS (U)

THE CONSTRIIP III COMPUTER CODE WAS USED TO
CALCULATE THE REDUCTION FACTORS WITHIN SINGLY STORY
RECTANGULAR BUILDINGS DUE TO FINITE RECTANGULAR AREAS
OF CONTAMINATION SURROUNDING THE BUILDINGS. THE
CONSTRIIP CODE PERMITTED BREAKING THE REDUCTION
FACTORS INTO WALL SCATTERED AND NON-WALL SCATTERED
COMPONENTS FROM FINITE SOURCE STRIPS UP TO 200 FT
WIDE. DECONTAMINATION IMPORTANCE FACTORS WERE
DETERMINED FOR FINITE AREAS SUBJECTED TO BOTH 1.25
MEV AND 0.66 MEV CONTAMINATION. THE
DIRECTIONAL RESPONSES FOR WALL SCATTERED RADIATION
COMING FROM ABOVE AND BELOW THE DETECTOR PLANE WERE
DETERMINED SEPARATELY FOR FINITE SOURCE FIELDS.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-695 683 6/18 18/8 15/3
COLORADO STATE UNIV FORT COLLINS DEPT OF ANIMAL
SCIENCE
DEPOSITION AND RETENTION OF SIMULATED NEAR-IN
FALLOUT BY FOOD CROPS AND LIVESTOCK.
DESCRIPTIVE NOTE: TECHNICAL PROGRESS REPT. NO. 1.
MAY 69 40P JOHNSON, JAMES E. ; LOVAAS,
ARVIN I. ;
CONTRACT: DAMC20-68-C-0120
PROJ: OCO-3223C

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (•RADIOACTIVE FALLOUT, RADIOLOGICAL
CONTAMINATION), (•RADIOLOGICAL CONTAMINATION,
•VEGETABLES), (•BOVINES, RADIOLOGICAL
CONTAMINATION), CHICKENS, LABELED SUBSTANCES,
RADIATION MEASUREMENT SYSTEMS, CIVIL DEFENSE
SYSTEMS, SIMULATION, RADIATION HAZARDS
IDENTIFIERS: LUTETIUM

(U)

(U)

SIMULATED NEAR-IN FALLOUT EXPERIMENTS HAVE BEEN
CONDUCTED USING BATCHES OF 88-175U AND 175-350U SAND
LABELLED WITH THE LOW ENERGY GAMMA-RAY EMITTER,
177LU (6.7 DAY HALF-LIFE). TARGETS OF FIELD
RELEASES WERE ALFALFA, PASTURE GRASS, FIELD CORN AND
GRAZING COWS. INITIAL RETENTION WAS DETERMINED BY
COMPARISON WITH DISC IMPACTORS AND RETENTION WAS
MEASURED AS A FUNCTION OF TIME. CONTROLLED
DEPOSITION EXPERIMENTS WERE PERFORMED IN A TEST
CHAMBER ON CORN, BARLEY, TOMATOES, BEANS AND CARROT
PLANTS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-695 687 2/4 2/5 15/6
STANFORD RESEARCH INST MENLO PARK CALIF
U. S. AGRICULTURE: POTENTIAL
VULNERABILITIES. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
JAN 69 91P BROWN,STEPHEN L. IPILZ.
ULRICH F. ;
CONTRACT: DAMC20-67-C-0116
PROJ: SRI-MU-6250-052, OCD-3535A

UNCLASSIFIED REPORT

DESCRIPTORS: (*NUCLEAR EXPLOSION DAMAGE,
*AGRICULTURE), (*AGRICULTURE, VULNERABILITY),
MATHEMATICAL MODELS, SURVIVAL, PRODUCTION,
PREDICTIONS, FERTILIZERS, PESTICIDES, IRRIGATION
SYSTEMS, PETROLEUM, ELECTRIC POWER PRODUCTION,
BOVINES, CHICKENS, PLANTS(BOTANY), NUCLEAR
EXPLOSIONS, RADIOACTIVE FALLOUT, CIVIL DEFENSE
SYSTEMS (U)

THE REPORT PRESENTS THE RESULTS OF STUDIES ON
SELECTED ASPECTS OF U.S. AGRICULTURE FOR THE
IDENTIFICATION OF POTENTIAL VULNERABILITIES UNDER
NUCLEAR ATTACK. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-696 135 15/3
URS RESEARCH CO BURLINGAME CALIF
CIVIL DEFENSE OPERATIONAL CONCEPTS, (U)
MAY 69 120P MILLER, CARL F. ;
REPT. NO. URS-757-1
CONTRACT: DAHC20-69-C-0142
PROJ: OCD-3119A

UNCLASSIFIED REPORT

DESCRIPTORS: (•CIVIL DEFENSE SYSTEMS, •MANAGEMENT
PLANNING), (•NUCLEAR WARFARE, PASSIVE DEFENSE),
NUCLEAR EXPLOSIONS, SYSTEMS ENGINEERING, HAZARDS,
SHELTERS, RADIOACTIVE FALLOUT, DAMAGE ASSESSMENT,
SURVIVAL, RADIATION EFFECTS, MORTALITY RATES,
CASUALTIES, DEBRIS, FIRES, BLAST, VEHICLES (U)
IDENTIFIERS: •OPERATIONAL CONCEPTS (U)

RELATIONSHIPS AMONG NUCLEAR WEAPONS EFFECTS AND
CIVIL DEFENSE OPERATIONAL SYSTEM VARIABLES ARE
SUMMARIZED AND USED AS A BASIS FOR DERIVING CIVIL
DEFENSE OPERATIONAL CONCEPTS. CLASSIFICATION OF
HAZARD CONDITIONS, AND SYSTEMS OR STANDARD OPERATION
ROUTINES. CENTERED ON PROTECTIVE SHELTER AND ON
OPERATIONS FROM THE SHELTER, NINE GENERAL CLASSES OF
BASIC HAZARD CONDITIONS (BHC) FOR WHICH DIFFERENT
OPTIONS OF STANDARD OPERATING ROUTINES (SOR'S)
WOULD BE REQUIRED ARE SUGGESTED. THE NINE CLASSES
ARE COMBINATIONS OF THREE POSSIBLE LEVELS OF FALLOUT
HAZARDS AND THREE POSSIBLE LEVELS OF PHYSICAL DAMAGE
FOR AN AREA. (AUTHOR) (U)

UNCLASSIFIED

JDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-697 172 6/5 15/6
RESEARCH TRIANGLE INST DURHAM N C OPERATIONS RESEARCH AND
ECONOMICS DIV
POSTATTACK PREVENTION AND CONTROL OF ENTERIC
DISEASES. (U)
DESCRIPTIVE NOTE: FINAL REPT. JUN 68-SEP 69,
SEP 69 134P JOHNSTON, DONALD R. ; FOGEL,
MARK E. ; VOOKS, ANTONIE W. ; HILL, EDWARD L. ;

REPT. NO. RTI-R-OU-406-F
CONTRACT: DAHC2U-68-C-0197
PROJ: RTI-OU-406

UNCLASSIFIED REPORT

DESCRIPTORS: (•NUCLEAR WARFARE, SURVIVAL),
(•INFECTIOUS DISEASES, CONTROL), EPIDEMIOLOGY,
DIGESTIVE SYSTEM DISEASES, FOOD POISONING,
HEPATITIS VIRUSES, SHIGELLA, AMOEBA, SALMONELLA,
MORTALITY RATES, CIVIL DEFENSE SYSTEMS,
RADIOACTIVE FALLOUT, HYGIENE, IMMUNITY, SEWAGE,
WATER SUPPLIES, FOOD, PEST CONTROL, MATHEMATICAL
MODELS (U)
IDENTIFIERS: •POST ATTACK RECOVERY (U)

THE OBJECTIVE OF THE WORK WAS TO IDENTIFY AND
EVALUATE APPROPRIATE METHODS FOR THE POST-NUCLEAR-
ATTACK PREVENTION AND CONTROL OF ENTERIC DISEASES
ENDEMIC TO THE UNITED STATES, AS PART OF
POSTATTACK ENVIRONMENTAL HEALTH PROBLEMS AND
REQUIREMENTS. (AUTHOR) (U)

UNCLASSIFIED

UDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-697 270 13/12 15/6 15/3
IIT RESEARCH INST CHICAGO ILL ENGINEERING MECHANICS
DIV
LABORATORY STUDY OF IGNITION OF MOST MATERIALS BY
FIREBRANDS. (U)
DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. MAY 68-MAY 69,
JUN 69 60P WATERMAN, T. E. ITAKATA, A.
N. :
REPT. NO. IITRI-J6142-FR
CONTRACT: N00228-68-C-2367
PROJ: IITRI-J6142, OCO-2539A
TASK: 253068

UNCLASSIFIED REPORT

DESCRIPTORS: (•NUCLEAR EXPLOSIONS, FIRES),
(•MATERIALS, •IGNITION), URBAN AREAS, AREA
COVERAGE, PROPAGATION, WOOD, COTTON, BLAST,
BUILDINGS, ROOFS, DAMAGE ASSESSMENT, THERMAL
RADIATION, CIVIL DEFENSE SYSTEMS, NEW MEXICO,
CALIFORNIA (U)
IDENTIFIERS: MASS FIRES, FIRE SPREAD, FIREBRAND,
SAN JOSE (CALIFORNIA), ALBUQUERQUE (NEW
MEXICO) (U)

THE STUDY IS DIRECTED AT EXAMINING, ON A LABORATORY
SCALE, THE SUSCEPTIBILITY OF INTERIOR AND EXTERIOR
MOST MATERIALS TO IGNITIONS BY VARIOUS FIREBRANDS.
EIGHT TYPES OF FIREBRANDS TYPICAL OF THOSE PRODUCED
BY COMMON ROOFING MATERIALS WERE MANUFACTURED IN THE
LABORATORY FOR USE IN THE STUDY. EVALUATIONS ARE
THEN MADE OF THE ABILITIES OF THESE FIREBRANDS TO
IGNITE A VARIETY OF MOST MATERIALS WHICH MIGHT BE
PRESENT IN AN URBAN AREA. THE EFFECTS OF AMBIENT
WIND, SUPPORTING THERMAL RADIATION AND BLAST DAMAGE
WERE CONSIDERED. AN ANALYSIS IS ALSO PERFORMED TO
EVALUATE THE EFFECTS OF FIREBRANDS ON FIRESREAD IN
THREE DIFFERENT USE-CLASS AREAS IN ALBUQUERQUE AND
SAN JOSE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-698 485 15/6
URS RESEARCH CO BURLINGAME CALIF
DEBRIS PREDICTION MODEL.
DESCRIPTIVE NOTE: FINAL REPT.,
JUN 69 26P EDMUNDS, JAMES E. ;
REPT. NO. URS-486-10
PROJ: OCD-33128

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (*NUCLEAR EXPLOSION DAMAGE, URBAN
AREAS), (*DEBRIS, DISTRIBUTION), MATHEMATICAL
PREDICTION, MATHEMATICAL MODELS, ROADS, BUILDINGS,
AREA COVERAGE, DAMAGE ASSESSMENT, SHOCK WAVES,
CIVIL DEFENSE SYSTEMS

(U)

IDENTIFIERS: OVERPRESSURE, NUCLEAR EXPLOSION
DEBRIS

(U)

THE REPORT COVERS THE MODIFICATIONS TO THE DEBRIS
PREDICTION MODEL WITH REGARD TO THE DEBRIS
DISTRIBUTION PROCEDURES. TECHNIQUES WERE DEVELOPED
TO MORE ACCURATELY PREDICT DEBRIS DEPTHS IN STREETS
FOR LIGHT DEBRIS CONDITIONS. THE REDUCTION IN THE
BLAST WAVE OVERPRESSURE DUE TO SHIELDING EFFECTS
WITHIN THE BUILT-UP CITY COMPLEX WAS ALSO CONSIDERED.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /BML27

AD-698 486 10/2 15/6
URS RESEARCH CO BURLINGAME CALIF
AVAILABILITY AND USE OF EMERGENCY POWER SOURCES IN
THE EARLY POSTATTACK PERIOD. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
AUG 69 128P FOGET, CARL R. IVAN HORN,
WILLIAM H. :
REPT. NO. URS-710-4
CONTRACT: DAHC20-69-C-0111
PROJ: OCD-33118

UNCLASSIFIED REPORT

DESCRIPTORS: (*NUCLEAR WARFARE, POWER SUPPLIES),
(*POWER SUPPLIES, SURVIVAL), (*FALLOUT SHELTERS,
POWER SUPPLIES), AUXILIARY POWER PLANTS,
GENERATORS, POWER PLANTS(ESTABLISHMENTS),
STATISTICAL ANALYSIS, URBAN AREAS, CIVIL DEFENSE
SYSTEMS, COST EFFECTIVENESS, ENGINES + MOTORS,
SCHEDULING (U)
IDENTIFIERS: *POST ATTACK RECOVERY, *EMERGENCY
POWER SOURCES, ELECTRIC POWER DEMAND (U)

THE STUDY FOR THE OFFICE OF CIVIL DEFENSE
CONCERNS THE IDENTIFICATION AND USE OF EMERGENCY
POWER SOURCES BOTH CONVENTIONAL AND UNCONVENTIONAL IN
THE EARLY POSTATTACK PERIOD. THE DEMAND FOR
EMERGENCY POWER DURING THE EARLY POSTATTACK PERIOD
WAS CHARACTERIZED AS WAS VARIOUS CANDIDATE EMERGENCY
POWER SOURCES, A COMPARISON OF THE TWO WERE MADE AND
THE FEASIBLE EMERGENCY POWER SOURCES WERE SELECTED
FOR FURTHER STUDY. AN INVENTORY OF THE EMERGENCY
POWER SOURCES IN THE COUNTRY WAS PERFORMED AND
METHODS OF UTILIZING THE POWER SOURCES WERE
DELINEATED. A STATISTICAL STUDY OF THE DEMAND AND
RESPONSE CAPABILITY FOR EMERGENCY POWER WAS MADE
USING SYNTHESIZED 'TYPICAL' CITIES. CASE STUDIES
OF TWO REAL CITIES WERE PERFORMED TO DETERMINE ACTUAL
DEMAND AND RESPONSE CAPABILITIES FOR EMERGENCY POWER
AND THEN COMPARED WITH THE RESULTS OF THE TYPICAL
CITY ANALYSIS. THE COST AND BENEFITS OF EMERGENCY
POWER AS RELATED TO CIVIL DEFENSE EFFORT WERE
DISCUSSED. (AUTHOR) (U)

CORPORATE AUTHOR - MONITORING AGENCY

- ADVANCE RESEARCH INC NEEDHAM HEIGHTS
MASS
CIRA-1
CRITICAL INDUSTRY REPAIR
ANALYSIS, FORD INDUSTRY.
AD-614 904
- AIR FORCE OFFICE OF SCIENTIFIC
RESEARCH ARLINGTON VA
AFOSR-TN40 1496
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TO PREDICTING SOCIETAL SYSTEM
RECOVERY FROM AN AIR ATTACK
AD-255 777
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METHODS APPLICABLE TO CIVIL DEFENSE
AD-276 117
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ON CONTAMINATED SLUSHY ROADS.
AD-474 153
- TP23
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AD-289 290
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DEPOSITION AND RETENTION OF
SIMULATED NEAR-IN FALLOUT BY FOOD
CROPS AND LIVESTOCK.
AD-695 683
- CORNELL AERONAUTICAL LAB INC BUFFALO
NY
VP149961
RADIOLOGICAL TARGET ANALYSIS
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CIVIL DEFENSE MANUAL FOR
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MUNICIPALITIES.
AD-416 493
- A PROTOTYPE MANUAL FOR
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FOR RADIOLOGICAL EXPOSURE.
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WASHINGTON D C
DASA-12761
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AD-422 317
- DEPARTMENT OF HEALTH EDUCATION AND
WELFARE WASHINGTON D C
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AD-622 598
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C
TRANSLATION-759
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POPULATION IN CONTAMINATED AREAS.
(TT-66-40813)
AD-470 281
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DC-FR-1061
SPECIFICATION OF THE
RADIOLOGICAL INFORMATION
REQUIREMENTS OF THE CIVIL DEFENSE
SYSTEM.
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AD-478 595
- DUNLAP AND ASSOCIATES INC DARIEN
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TESTING CIVIL DEFENSE PLANS AND
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AND LOCAL LEVELS.
AD-408 967
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ENG-HUB

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CALIF

A PROTOTYPE MANUAL ON CIVIL
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OPERATIONS. PHASE II.
(USNRDL-TRC-65)
AD-629 710

CIVIL DEFENSE ASPECTS OF
MUNICIPAL WATER SYSTEMS.
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ES-704
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POSTATTACK STUDY. VOLUME I.
AD-649 926

ENGINEERING-SCIENCE INC ARCADIA
CALIF

THE RECOVERY AND RESTORATION OF
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NUCLEAR WAR ATTACK.
AD-405 713

FLOW CORP WATERTOWN MASS NUCLEAR DIV

CONESCO-4497
DECONTAMINATION OF FINITE
RECTANGULAR AREAS.
AD-499 664

FOREIGN TECHNOLOGY DIV BRIGHT-
PATERSON AFB OHIO

FTD-7764 291
PROTECTING THE POPULATION FROM
BACTERIOLOGICAL WARFARE WEAPONS.
(FT-65 67702)
AD-609 917

BAUTNEY AND JONES COMMUNICATIONS INC
WASHINGTON, D C

64-12-65
RADIOLOGICAL DATA HANDLING
SYSTEM FOR USE IN THE LOCAL LEVEL
EMERGENCY OPERATING CENTER
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HRB-75011-F
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AD-629 994

HRB-74711-F
PRE-PROTOTYPE HAND-HELD FIRE
DETECTORS.
AD-615 674

HRB-74511-F
HIGHER EDUCATION AND THE POST-
ATTACK PERIOD.
AD-627 304

HRB-77711-F
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FIRE MAPPING SYSTEMS ANALYSIS.
AD-655 685

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HI-647-RR
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RESEARCH.
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MODELS OF THE POSTATTACK
ECONOMY.
AD-629 713

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CRISIS PREPARATIONS FOR
POSTATTACK ECONOMIC RECOVERY.
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HI-693-RR
ON DAMAGE ASSESSMENT MODELS.
AD-644 492

HI-777/2-RR
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DETERRENCE.
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WI-477-RR
CHANGING PROSPECTS, MISSIONS
AND ROLES FOR CIVIL DEFENSE: 1965-
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 AD-601 467

• HUMAN SCIENCES RESEARCH INC MCLEAN VA
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 ORGANIZATION IN POST-THERMONUCLEAR
 ATTACK SOCIETY: SOME EXPLORATORY
 STUDIES.
 AD-653 466

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 HSR-RR-66/11-HH
 A STUDY OF PERSONNEL DEMANDS
 AND AVAILABILITIES FOR POSTATTACK
 COUNTERMEASURE SYSTEMS.
 AD-627 823

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 HSR-RR-66/14-PR
 A STUDY OF THE DEMOGRAPHY OF
 NUCLEAR WAR.
 AD-647 802

• • •
 HSR-RR-66/21-CR
 VULNERABILITIES OF SOCIAL
 STRUCTURE: STUDIES OF THE SOCIAL
 DIMENSIONS OF NUCLEAR ATTACK.
 AD-653 464

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 HSR-HQ-67/1-ME
 THEORIES OF SOCIAL CHANGE AND
 THE ANALYSIS OF NUCLEAR ATTACK AND
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 AD-654 624

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 HSR-RR-67/2-CR
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 CIVIL DEFENSE PLANNING.
 AD-654 201

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 HSR-RR-67/4-T1
 CONSUMER BEHAVIOR AND WORKER
 PARTICIPATION IN RECOVERY
 ACTIVITIES.
 AD-651 094

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 HSR-RR-67/8-SO
 THE FEASIBILITY OF DEVELOPING
 STANDARD DESCRIPTIONS OF POST-
 ATTACK SITUATIONS.

AD-655 644

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 METHODS AND TECHNIQUES FOR
 POSTATTACK MANPOWER UTILIZATION.
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 IN THE IMPLEMENTATION OF LOCAL
 SURVIVAL AND RECOVERY ACTIVITIES.
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 • • •
 RR 61 1 SE
 OUTLINE OF AN ANALYTIC APPROACH
 TO PREDICTING SOCIETAL SYSTEM
 RECOVERY FROM AN AIR ATTACK.
 (AFOSR-TN-68 1496)
 AD-255 770

• • •
 RR 63 3 R2
 AN APPROACH TO THE STUDY OF
 SOCIAL AND PSYCHOLOGICAL EFFECTS OF
 NUCLEAR ATTACK
 AD-602 096

• IIT RESEARCH INST CHICAGO ILL
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DOCUMENT CONTROL DATA - R & D		
<small>(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)</small>		
1. ORIGINATING ACTIVITY (Corporate author) DEFENSE DOCUMENTATION CENTER Cameron Station Alexandria, Virginia 22314		2. REPORT SECURITY CLASSIFICATION Unclassified
3. REPORT TITLE CIVIL DEFENSE SYSTEMS: PREATTACK AND POSTATTACK (NUCLEAR WARFARE). Volume I		2b. GROUP
4. DESCRIPTIVE NOTES (Type of report and inclusive dates) Bibliography (March 1960 - September 1969)		
5. AUTHOR(S) (First name, middle initial, last name)		
6. REPORT DATE May 1970	7a. TOTAL NO. OF PAGES 195	7b. NO. OF REFS 156
8a. CONTRACT OR GRANT NO.	8b. ORIGINATOR'S REPORT NUMBER(S) DDC-TAS-70-44-I	
8c. PROJECT NO.	8d. OTHER REPORT NUMBER(S) (Any other numbers that may be assigned this report) AD-705 900	
10. DISTRIBUTION STATEMENT This document has been approved for public release and sale; its distribution is unlimited.		
11. SUPPLEMENTARY NOTES Volume II, AD-868 950, (U-L)	12. SPONSORING MILITARY ACTIVITY	
13. ABSTRACT <p>This bibliography is Volume I of a two-volume set on <i>Civil Defense Systems: Preattack and Postattack (Nuclear Warfare)</i>.</p> <p>Documents contained in this volume deal primarily with emergency power source utilities, vulnerability of utilities, industry and transportation, radiation exposure control, control of diseases, capabilities of fire services, recovery and debris removal.</p> <p>Computer-generated indexes of Corporate Author-Monitoring Agency, Subject, and Contract are provided.</p>		

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14 KEY WORDS	LINK A		LINK B			
	ROLE	WT	ROLE	WT	ROLE	WT
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